MAYURA

Vol. 10 1993

NEWSLETTER

OF

BIRDWATCHER'S SOCIETY OF ANDHRA PRADESH

INSTRUCTIONS TO CONTRIBUTORS

Contributors of scientific articles and miscellaneous notes are requested to assist the editors by observing the following instructions.

1. Papers which have at the same time been offered for publication to other journals or periodicals, or have already been published elsewhere, should not be submitted.

2. Papers/articles pertaining to ornithology in Andhra Pradesh state or to bird species found in Andhra Pradesh state only, will be accepted.

3. The manuscript should be preferably typed (double spacing) on one side of a sheet only, and the sheets properly numbered.

4. All common names of birds, mammals, etc., should be followed by the scientific name the first time they are mentioned in the text. The scientific names should be underlined.

5. Trinomials referring to subspecies should only be used where identification has been authentically established by comparisons of specimens actually collected.

6. Photographs for reproduction must be clear and show good contrast. Prints must be postcard sized and on glossy glazed paper.

7. Text figures, line drawings and maps should be in Indian Ink.

8. Reference to literature should be placed at the end of the paper, alphabetically arranged under the author's name, with the abridged titles of jounals or periodicals underlined and titles of books not underlined. Thus:

   Choudhury, B.C. (1984): Habitat Survey Project of BSAP - a preliminary report. Mayura 5(4): 80-89.

9. Reference to literature in the text should be made by quoting the author's name and year of publication, thus : (Choudhury 1984).

10. The editors reserve the right, other things being equal, to publish a member's contribution earlier than a non-member's.

EDITORS : MAYURA

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FOR PRIVATE CIRCULATION ONLY
Editor : Aasheesh Pittie, 14-7-370, Begum Bazaar, Hyderabad - 500 012.

Articles to MAYURA may be sent to the Honorary Secretary, BSAP, 6-3-912/1, Kapadia Lane, Somajiguda, Hyderabad - 500 482, or to the Editor.

SOME INTERESTING OWL SPECIES AROUND ALWAL

(with one text-figure)

P. KANNIAH and T. GANESH

Alwal is a fast developing residential area, 17 km. north of Hyderabad. Here, a few pockets of less disturbed areas still survive with their own interesting birdlife. Given below are some observations compiled from our notes, recording four species of owls - Great Horned Owl *Bubo bubo*, Barn Owl *Tyto alba*, Mottled Wood Owl *Strix ocellata* and Shorteared Owl *Asio flammeus* - which have been seen with a certain regularity within 15 km. of Alwal.

Great Horned Owl *Bubo bubo*

There are three prominent places around Alwal where the horned owl is seen throughout the year. These are

1. Timaipally - 12 km. east of Alwal,
2. Gundla Pochampally - 10 km. north-west of Alwal and
3. Shamirpet - 12 km. north of Alwal.

All these are scrub and boulder country roughly lying on an arc at 8 km. intervals.

Apart from these places we have seen the owls at Alwal, Kompalli kancha - which is 3 km. from Gundla Pochampalli, Hakimpet and Fox Sagar scrubland. For the last two years this owl has not been seen at Alwal (Military Dairy Farm, Fig. 1).

The most favoured roosting sites of these owls are rocky crevices sheltered by an over-hanging boulder in scrub country. These roosts are inaccessible and the birds get perfectly camouflaged among the boulders. The white droppings on the rock-face gives a clue to the bird's presence in the locality.

The maximum number of owls seen at the three places are as follows - Timaipally 4 (27 Dec 1987 and 3 Apr 1989); Gundla Pochampally 4 (13 Feb 1987) and Shamirpet 2 (Jun 1989).

Courtship display was noticed in late November and December - one of the birds perched on a huge boulder, calls with a begging posture - tail pointing up and wings spread. The other bird flies in and lands on a boulder near it. But soon the begging bird flies away to another boulder. Only once an attempt to mount was noticed by the other bird (Male). Such behaviour is noticed late in the evening usually as a

silhouette. Col. Sparrow, cited by Salim Ali in his Hyderabad Ornithological Survey 1933-34, has seen eggs of Horned Owls as early as 5 November and young in December at Navipet (165 km. from Alwal). This along with our observation indicates the breeding period to be November, December and possibly January.

Barn Owl *Tyto alba*

This bird is seen throughout the year but its occurrence seems to be sporadic. It was seen consistently along the Alwal - cavalry barracks railway line during 1987. But is missing in 1989. Its main day-time roost here was under the road bridge between cavalry barracks and Alwal. Whenever the only steam-hauled Ajmer Express passes under the bridge, around 8 pm., the bird would fly out before the train and could be clearly seen under the trains' head lamp!

The screech of the owl is often heard. Once sitting on a Neem tree *Azadirachta indica* in full glare of a street light, it kept calling for five minutes and more (21 March 1986).

We also encountered this bird at dusk on a flowering Silk Cotton *Bombax ceiba*, possibly using the tree as a perch to hunt rats or bats? Seen frequently hunting from telephone and electric poles at Kompalli Kancha, especially on moonlit nights and when the grass is not too tall. Their fondness for electric poles at the Kancha as perches, had killed many of them due to electrocution at the faulty poles. Some time these owls were also seen hunting under trees eg., *Acacia nilotica* in wooded areas of Dairy Farm, where the Mottled Wood Owl *Strix ocellata* was also present.

All our notings of this owl are within 5 km. of Alwal. Its status in other areas around Alwal is not known and we have also not encountered any bird outside this limit.

Mottled Wood Owl *Strix ocellata*

We first noticed this owl by its characteristic call 'chuoo...uha'. Once we taped this call and called it back. The bird moved closer to us and having realised its mistake, took off. It has another call, 'hoot', which was heard only once in March.

This owl was seen only at the Military Dairy Farm between February 1989 and May 1989. At other times, its presence was not noticed here. Its favourite haunt is the (moister) wooded area in the farm, overgrown naturally with *Acacia* sp., Neem , Silk Cotton and a few other species. Often a pair was seen huddled together in a Neem or *Acacia*. But when disturbed, they fly off in different directions. This wooded area is roughly 200 x 300 sq. m. but the owl frequents other parts of the Dairy Farm which are more open.

The breeding of this owl is supposed to be from December to April (Ali, 1933-34). The owls at Alwal did not seem to be breeding here, but their frequency of calling was definitely high in March. In May, they were silent. The status of the owl at Alwal is rare as the wooded areas or large ancient trees have considerably diminished.

Short-eared Owl *Asio flammeus*

The status of this owl around Hyderabad remains to be determined (Taher and Pittie, 1989). It was also not met with during Salim Ali's survey (Ali, 1933-34). Only Col. Sparrow seems to have shot one at Partur in January 1911. Around Alwal at the Kompalli Kancha, we have recorded it as a regular winter visitor. We have seen it in 1987, 1988 and 1989.

The first and last sightings are 22 November 1988 (?) and 29 March 1988 respectively. It is more commonly met at the Kancha in February and March. It comes out from its roost usually within 15-18 min. after sunset, often flying or soaring high up in the company of Harriers *(Circus)*. We have also seen it as early as 4.30 pm. perched on a palm, and seeing us coming was bold enough to fly straight at us, with the sun falling directly on its face. It was then the black around its eyes could be clearly noticed. It is a ground rooster and spends the day amidst clumps of grass where it makes a kind of bed, sometimes with feathers. In the evening, it leaves its roost in the tall grass and moves to areas where the grass is cut and the ground more open. We have not encountered this bird anywhere else except possibly at the Military Dairy Farm.

Call For Habitat Protection

Quarrying is the main threat to the Great Horned Owl. At Timaipally, the boulders have been taken on lease for this purpose and soon we should have the Horned Owl's habitat destroyed. Not all places are under lease, at Gundla Pochampally, Shamirpet and even Timaipally. Some areas are under the care of the State Forest Department. But the Department's idea of converting the scrub to social forestry can be disastrous. Just think what will happen to Painted Spurfowl *Galloperdix lunulata*, Peafowl *Pavo cristatus*, numerous other scrub birds, Jackals *Canis aureus*, the Wolf *Canis lupus*, Fox *Vulpes bengalensis*, Porcupine *Hystrix indica*, Civets *(Viverridae)*, Jungle Cats *Felis chaus*, roosting bats, Starred Tortoise *Geochelone elegans*, Monitor Lizards *(Varanidae)*, Hare *Lepus nigricollis*, Ruddy Mongoose *Herpestes smithi*, etc.? Lets keep the stones for the owls' sake because they keep the grains for ours.

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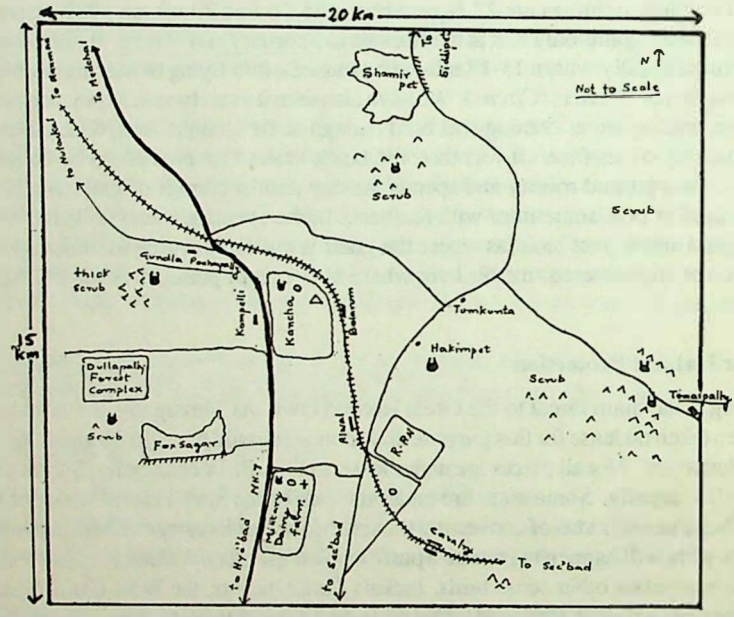
Address for correspondence:

P. Kanniah, 128 Balaji Colony, Kakaguda, SECUNDERABAD - 500 015.

T. Ganesh, S-1 Uma Apartments, Ram Nagar Colony, Alwal, SEC'BAD - 500 010.



Map showing the distribution of owl species north of Alwal (Ranga Reddy dist).

Legend: ● : Great horned owl + : Mottled Wood Owl.
o : Barn owl R.P.N : Rasthra Pathy Nilayam
△ : Short-eared owl ∧ : Rocky hills

NOTE: As this list is already part of my own records, it will not be entered again in BIRDRECORDER for Windows.

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A BIRDING TRIP TO ROLLAPADU BUSTARD SANCTUARY, KURNOOL DISTRICT, ANDHRA PRADESH

(with one text-figure)

AASHEESH PITTIE

Rollapadu is a small village, about 18 km. east of Nandikotkur town (15°52'N and 78°18'E) towards Nandyal in Kurnool District of Andhra Pradesh. It shot to fame in July 1984 when 35 Great Indian Bustards *Ardeotis nigriceps* were 'discovered' by the Andhra Pradesh Forest Department officials and the Bombay Natural History Society teams in its vicinity. Though this bird's existence in A.P. is mentioned in various old records of ornithologists and naturalists (Manakadan and Rahmani 1986), a paucity of recent sightings all over the country, has given it the dubious distinction of an endangered status. Thus when this flock was seen in Rollapadu, it was indeed cause for celebration and quick action to ensure its protection. The Andhra Pradesh Forest Department has declared an area of 800 acres as the Rollapadu Great Indian Bustard Sanctuary and enclosed this area with trench-cum-mound boundaries. A thin network of roads within this area is also bordered thus so that villagers can cross the sanctuary and at the same time, not disturb the birds. The trench-cum-mound borders keep cattle and sheep, from grazing within the sanctuary, and also regulate any fires, which are caused accidentally by careless smokers, from spreading throughout the area - thus forming an effective fire-break.

As it lies in the plains between the Nallamalai and Erramalai ranges of the Eastern Ghats, the first thing one notices about the region's topography is the gently undulating land - like the surface of an open palm. Agriculture (sorghum, tobacco, groundnut, Italian millet, cotton and sunflower) and animal husbandry are the main occupation of the people here. Precipitation is mainly (in the form of) the south-west Monsoon, with strong south-westerly and westerly winds and rain from end May to August. Again from end September-October the region receives the north-east Monsoon. Temperatures soar in April-May to 42°C, with December being the coolest month at 18°C.

The biotope of the region comprises mainly of agricultural fields, grazing lands and very thin scrub. With protection, the vegetation in the sanctuary area has considerably improved and contrasts sharply with the grazed land outside its boundaries. Most of the area is covered by a number of grasses, common among which are *Aristida gunivulsys, Chrysopogon fulvus, Eremopogon foveolatus, Heteropogon contortus and Iseilema anthephoroides.* Shrubs and small trees are common near two

small streams within the sanctuary. These are represented by *Butea monosperma, Cassia auriculata, Cassia fistula, Canthium parviflorum, Diospyros melanoxylon, Morinda tinctoria, Prosopis spicigera, Randia dumetorum and Phoenix sylvestris.* Most plants in Rollapadu are monsoonal ephemerals and complete their cycle within a period of 6-7 months from May to December.

The study of the ecology of the bustard in Rollapadu, was begun by the Bombay Natural History Society in August 1985. According to their findings, two breeding seasons occur. A minor breeding season in late summer (May-June) and the main breeding season from August-December. Birds disperse after the breeding season is over and are generally not seen in the sanctuary all summer. During the breeding season also, only the dominant male and hens remain within the sanctuary. Younger males are seen in surrounding groundnut fields. The main food of the bustard here consists of crop plants like sorghum and groundnuts, insects (mainly grasshoppers) and small reptiles. A 'new' food item recorded by the B.N.H.S. team here is the ripe fruit of *Morinda tinctoria.*

A team of 5 members of the B.S.A.P. visited Rollapadu on 6th and 7th August 1988. The main objectives being to see the bustard and also for general birding. We had plenty of both. On 6th we sighted 21 bustards on a morning walk and on the 7th, 32! As mentioned earlier, the lay of the land is such, that a cock can be spotted from a considerable distance. Their habit of display-ing on mounds helps in locating them too. Generally 3-5 hens were seen feeding together in a patch of grassland. Once a cock was seen displaying within 200 feet of 2 feeding hens, who seemed least interested in his contortions! Towards evening, we were watching a large cock displaying in his area, when another male bustard landed c. 100 feet away from him. As soon as the displaying bird saw the intruder, it charged with spread wings and puffed-up, distended gular pouch, at the latter, who took flight! When the birds are disturbed in their feeding, they take off laboriously and fly at c. 50' - 60' (above the ground) with strong wing beats, in a straight line till about 500 m. or more, when they land. At times, when we stalked a displaying cock from behind the trench-cum-wall, and he got wind of us, he would take off, swinging towards us to check out the source of disturbance. Most cocks displayed in the morning and late evening. While we were there, the sky was invariably overcast most of the time. It rained heavily for a short while twice, and drizzled lightly often. Once while driving to the nearby Talamudipi Tank, we saw 2 hens in a field near the tar road. One cock was sitting in the grass at 1030 hours when seen at 200 yds. It allowed us to come upto c. 100' before rising and walking away.

A checklist, with brief notes, of the birds of Rollapadu is given, incorporating those seen by the B.N.H.S. team.

CHECKLIST OF THE BIRDS OF ROLLAPADU AREA

Legend : + = BNHS record; birds seen by author at, * = Talamudipi Tank; @ = Village; # = Other area. Rest of the birds observed within Rollapadu.

+ LITTLEGREBE *Podiceps ruficollis*
* LARGE CORMORANT *Phalacrocorax carbo*
* GREY HERON *Ardea cinerea*
* LARGE EGRET *Ardea alba*
+ POND HERON *Ardeola grayii*
+ CATTLE EGRET *Bubulcus ibis*
* LITTLE EGRET *Egretta garzetta*
+ REEF HERON *Egretta gularis*
* PAINTED STORK *Mycteria leucocephala*
+ WHITENECKED STORK *Ciconia episcopus*
+ WHITE STORK *Ciconia ciconia*
+ BLACK STORK *Ciconia nigra*
* WHITE IBIS *Threskiornis aethiopica*
10 birds seen on far shore of *Talamudipi Tank.*
+ BLACK IBIS *Pseudibis papillosa*
+ LESSER FLAMINGO *Phoeniconaias minor*
+ BARHEADED GOOSE *Anser indicus*
+ BRAHMINY DUCK *Tadorna ferruginea*
+ PINTAIL *Anas acuta*
+ COMMON TEAL *Anas crecca*
SPOTBILL DUCK *Anas poecilorhyncha*
small flocks of c. 30 flying over the sanctuary in the morning.
+ SHOVELLER *Anas clypeata*
+ COMB DUCK *Sarkidiornis melanotos*
BLACKWINGED KITE *Elanus caeruleus*
@ PARIAH KITE *Milvus migrans*
Near village. *Uncommon.*
+ SHIKRA *Accipiter badius*
WHITE-EYED BUZZARD-EAGLE *Butastur teesa*
+ WHITEBACKED VULTURE *Gyps bengulensis*
# EGYPTIAN VULTURE *Neophron percnopterus*
On roadside, between Rollapadu and Talamudipi tank.
+ PALE HARRIER *Circus macrourus*
+ MONTAGU'S HARRIER *Circus pygargus*
+ MARSH HARRIER *Circus aeruginosus*
+ PIED HARRIER *Circus melanoleucos*
SHORT-TOED EAGLE *Circaetus gallicus*
+ KESTREL *Falco tinnunculus*
PARTRIDGE *Francolinus spp.*
+ PAINTED PARTRIDGE *Francolinus pictus*
+ GREY PARTRIDGE *Francolinus pondicerianus*
RAIN QUAIL *Coturnix coromandelica*
Heard in the early mornings and late evenings.
JUNGLE BUSH QUAIL *Perdicula asiatica*
In grove of trees near stream.

u/ DEMOISELLE CRANE *Anthropoides virgo*
One bird overhead on 7th morning.
+ WHITEBREASTED WATERHEN *Amaurornis phoenicurus*
GREAT INDIAN BUSTARD *Ardeotis nigriceps*
+ LESSER FLORICAN *Syphcotides indica*
REDWATTLED LAPWING *Vanellus indicus*
Infrequently seen near streams.
+ YELLOW-WATTLED LAPWING *Vanellus malabaricus*
* LITTLE RINGED PLOVER *Charadrius dubius*
+ LESSER SAND PLOVER *Charadrius mongolus*
+ CURLEW *Numenius arquata*
+ MARSH SANDPIPER *Tringa stagnatilis*
GREENSHANK *Tringa nebularia*
One bird on fringe of rain-puddle.
* GREEN SANDPIPER *Tringa ochropus*
* COMMON SANDPIPER *Tringa hypoleucos*
+ LITTLE STINT *Calidris minutus*
+ RUFF and REEVE *Philomachus pugnax*
+ BLACKWINGED STILT *Himantopus himantopus*
+ STONE CURLEW *Burhinus oedicnemus*
+ INDIAN COURSER *Cursorius coromandelicus*
+ BLACKBELLIED TERN *Sterna acuticauda*
COMMON SANDGROUSE *Pterocles exustus*
Many flocks in the morning for about an hour - flying to or from water. Lovely birds with a whirred winged flight.
@ BLUE ROCK PIGEON *Columba livia*
+ RED TURTLE-DOVE *Streptopelia tranquebarica*
RING DOVE *Streptopelia decaocto*
Commonest dove on the grassland.
@ LITTLE BROWN DOVE *Streptopelia senegalensis*
@ ROSERINGED PARAKEET *Psittacula krameri*
# PIED CRESTED CUCKOO *Clamator jacobinus*
@ KOEL *Eudynamys scolopacea*
@ COUCAL *Centropus sinensis*
GREAT HORNED OWL *Bubo bubo*
Seen on 7th, under an *Acaciaarabica* tree. Later near a stream.
@ SPOTTED OWLET *Athene brama*
+ SHORTEARED OWL *Asio flammeus*
NIGHTJAR *Caprimulgus* spp.
One of the members disturbed about 6 birds resting under bushes beside the stream.
ALPINE SWIFT *Apus melba*
No sooner we piled out of the car near the Interpretation Centre, we saw this bird flying above us! There must have been 8-10 birds. Very fast flight on impressively long wings held low in flight. Mostly do not seem to flap! The white throat (x dark breast band) not easily visible at times.
PALM SWIFT *Cypsiurus parvus*

A few after 1300 hrs. on 6th near I.C.
PIED KINGFISHER *Ceryle rudis*
One bird near stream.
+ SMALL BLUE KINGFISHER *Alcedo atthis*
@ WHITEBREASTED KINGFISHER *Halcyon smyrnensis*
+ SMALL GREEN BEE-EATER *Merops orientalis*
ROLLER *Coracias benghalensis*
Common.
+ HOOPOE *Upupa epops*
# GREY HORNBILL *Tockus birostris*
One bird seen on wire just before Nandikotkur.
SINGING BUSH LARK *Mirafra javanica*
REDWINGED BUSH LARK *Mirafra erythroptera*
ASHYCROWNED FINCH-LARK *Eremopterix grisea*
RUFOUSTAILED FINCH-LARK *Ammomanes phoenicurus*
+ SHORT-TOED LARK *Calandrella cinerea*
CRESTED LARK *Alauda gulgula*
Species not too certain but most likely both malabarica and deva present.
. SMALL SKYLARK *Alauda gulgula*
+ COMMON SWALLOW Hirundo rustica
• CLIFF SWALLOW *Hirundo fluvicola*
REDRUMPED SWALLOW *Hirundo daurica*
GREY SHRIKE *Lanius excubitor*
Common: perched on almost every tree!
BAYBACKED SHRIKE *Lanius vittatus*
. Less common than above.
+ GOLDEN ORIOLE *Oriolus oriolus*
BLACK DRONGO *Dicrurus adsimilis*
Not common, but a couple seen near the Great Indian Bustards, hawking insects from perches.
BLACKHEADED MYNA *Sturnus pagodarum*
Uncommon.
+ ROSY PASTOR *Sturnus roseus*
+ STARLING *Sturnus vulgaris*
@ COMMON MYNA *Acridotheres tristis*
@ TREE PIE *Dendrocitta vagabunda*
@ HOUSE CROW *Corvus splendens*
+ JUNGLE CROW *Corvus macrorhynchos*
COMMON WOOD SHRIKE *Tephrodornis pondicerianus*
+ LARGE CUCKOO-SHRIKE *Coracina novachollandiae*
+ SMALL MINIVET *Pericrocotus cinnamomeus*
IORA Aegithina tiphia
REDVENTED BULBUL *Pycnonotus cafer*
+ YELLOWEYED BABBLER *Chrysomma sinense*
+ COMMON BABBLER *Turdoides caudatus*
@ LARGE GREY BABBLER *Turdoides malcolmi*
+ WHITEHEADED BABBLER *Turdoides affinis*
+ REDBREASTED FLYCATCHER *Muscicapa parva*
STREAKED FANTAIL WARBLER *Cisticola juncidis*
Chipping all over the grassland, in areas where the grass is at least 6"-8" high.
FRANKLIN'S WREN-WARBLER *Prinia hodgsoni*
Common near the wet-areas. In breeding plumage. Calling from bush and tree tops.
INDIAN WREN-WARBLER *Prinia subflava*
Not very common, but singing from perches.
+ ASHY WREN-WARBLER *Prinia socialis*
+ LESSER WHITETHROAT *Sylvia curruca*
+ MAGPIE-ROBIN *Copsychus saularis*
+ BLACK REDSTART *Phoenicurus ochruros*
+ COLLARED BUSH CHAT *Saxicola torquata*
PIED BUSHCHAT *Saxicola caprata*
INDIAN ROBIN *Saxicoloides fulicata*
INDIAN PIPIT *Anthus novaeseelandiae*
+ YELLOW WAGTAIL *Motacilla flava*
+ GREY WAGTAIL *Motacilla cinerea*
+ WHITE WAGTAIL *Motacilla alba*
LARGE PIED WAGTAIL *Motacilla maderaspatensis*
+ PURPLE SUNBIRD *Nectarinia asiatica*
@ HOUSE SPARROW *Passer domesticus*
+ YELLOWTHROATED SPARROW *Petronia xanthocollis*
BAYA *Ploceus philippinus*
WHITETHROATED MUNIA *Lonchura malabarica*
+ SPOTTED MUNIA *Lonchura punctulata*
+ BLACKHEADED MUNIA *Lonchura malacca*
+ GREYNECKED BUNTING *Emberiza buchanani*

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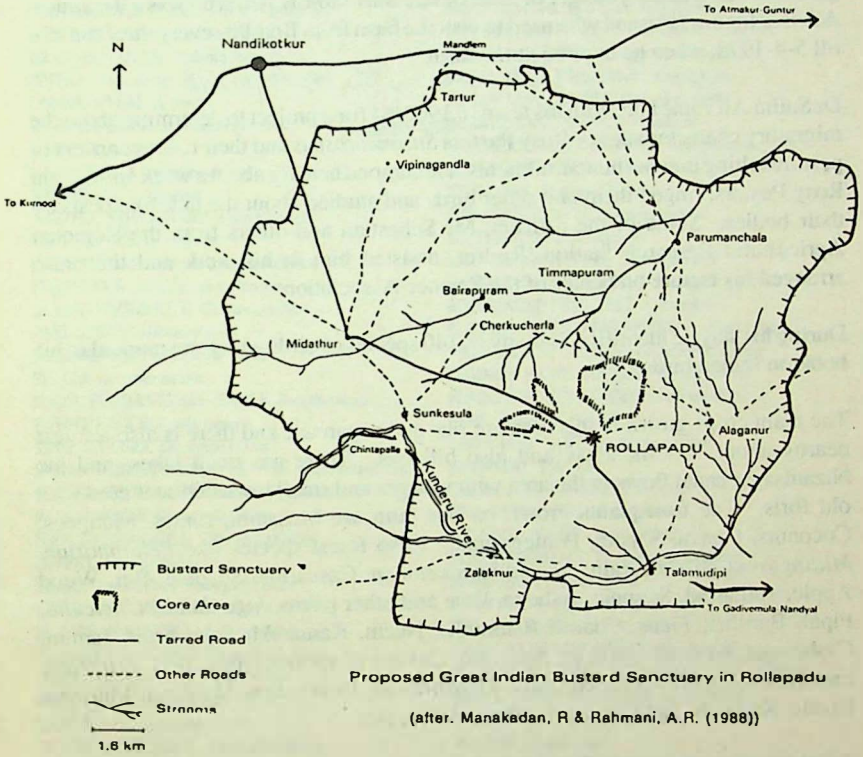
Addressforcorrespondence:
Aasheesh Pittie, 14-7-370 Begum Bazaar, HYDERABAD - 500 012.

NOTE: Other members of the team were Binod C Choudhury, Varaprasad, Rajeev Mathew and Sushil Kapadia.



Proposed Great Indian Bustard Sanctuary in Rollapadu

(after. Manakadan, R & Rahmani, A.R. (1988))

DR SALIM ALI'S VISIT TO DECCAN PLANTATIONS PVT LTD, ANANDNAGAR, VIA RUDRUR, DISTRICT NIZAMABAD, ANDHRA PRADESH

LAXMICHAND K SHAH (Late)

Dr Salim Ali was the younger brother of late Shri Jabir A Ali, who was a Technical Advisor forour farm and who used to visit the farm from Bombay every three months till 5-4-1975, when he expired at the farm.

ask Roy Sebastian the date/month

Dr Salim Ali came here with his team in 1962/64 for a project to determine about the migratory characteristics of Rosy Pastors *Sturnus roseus* and their role as carriers of pests resulting in some human ailments. He camped here for about a week and caught Rosy Pastors, ringed them and other birds and studied about the tick-like pests on their bodies. Some of the officers, Mr Sebastian and others from the Regional Agricultural Research Station, Rudrur, assisted him in his work and they also arranged his lecture on behalf of the Science Association.

During his stay he identified as many as 140 species of birds which are marked in his book on Indian birds.

The main crops grown in this area are rice and sugarcane and there is also a forest nearby about 10 kms. away and also hillocks. There are small lakes, and the Nizamsagar canal flows in the area with villages and small township scattered with old forts. The fruit plants grown on our farm are Mosambi, Limes, Mangoes, Coconuts, Guava, Sapota, Pomegranate. Also forest species like *Peltophorum, Millingtonia,* Sissoo, Rain Tree *Samania saman*, Casuarina, Sitaphal, Ber, Wood Apple, Tamarind, Soapnut, Ashoka, Date and other palms, *Inga dulcis, Gliricidia,* Pipal, Barghel, *Ficus*, Charoli (Chiranji), Neem, Kamarakh, Jack Fruit, Jamun, Cashewnut, Almonds, *Acacia, Bauhinia, Cassias* of various types, Siris, *Erithrina,* Eucalyptus, Gulmohar, *Jacaranda, Lagestromia*, Denchanpa, Maulsari, Murayya Exotic, Kadamb, Sag (Teak), Bamboo, Arjun, etc.

The list given below were ticked off in a copy of *The Book of Indian Birds*, by the late Dr. Salim Ali. The book was presented to the owners of this plantation.

LIST OF BIRDS SEEN

LITTLE GREBE *Podiceps ruficollis*
DARTER *Anhinga rufa*
GREY HERON *Ardea cinerea*
POND HERON *Ardeola grayii*
LITTLE EGRET *Egretta garzetta*
INDIAN REEF HERON *E. gularis*
CHESTNUT BITTERN *Ixobrychus cinnamomeus*
WHITENECKED STORK *Ciconia episcopus*
WHITE IBIS *Threskiornis aethiopica*
BRAHMINY DUCK *Tadorna ferruginea*
PINTAIL *Anas acuta*
COMMON TEAL *A. crecca*
SPOTBILL DUCK *A. poecilorhyncha*
GADWAL *A. strepera*
GARGANEY *A. querquedula*
SHOVELLER *A. clypeata*
WHITE-EYED POCHARD *Aythya nyroca*
TUFTED DUCK *A. fuligula*
COTTON TEAL *Nettapus coromandelianus*
COMB DUCK *Sarkidiornis melanotos*
BLACKWINGED KITE *Elanus caeruleus*
PARIAH KITE *Milvus migrans*
BRAHMINY KITE *Haliastur indus*
SHIKRA *Accipiter badius*
WHITE-EYED BUZZARD-EAGLE *Butastur teesa*
TAWNY EAGLE *Aquila rapax*
KING VULTURE *Sarcogyps calvus*
INDIAN WHITEBACKED VULTURE *Gyps bengalensis*
SCAVENGER VULTURE *Neophron percnopterus*
PALE HARRIER *Circus macrourus*
SHORT-TOED EAGLE *Circaetus gallicus*
OSPREY *Pandion haliaetus*
SHAHEEN FALCON *Falco peregrinus*
REDHEADED MERLIN *F. chicquera*
EUROPEAN KESTREL *F. tinnunculus*
PAINTED PARTRIDGE *Francolinus pictus*
GREY PARTRIDGE *F. pondicerianus*
GREY QUAIL *Coturnix coturnix*
RAIN QUAIL *C. coromandelica*
JUNGLE BUSH QUAIL *Perdicula asiatica*
RED SPURFOWL *Galloperdix spadicea*
PEAFOWL *Pavo cristatus*
YELLOWLEGGED BUTTON QUAIL *Turnix tanki*
BUSTARD-QUAIL *T. suscitator*
SARUS CRANE *Grus antigone*
WHITEBREASTED WATERHEN *Amaurornis phoenicurus*
INDIAN MOORHEN *Gallinula chloropus*
PURPLE MOORHEN *Porphyrio porphyrio*
COOT *Fulica atra*
PHEASANT-TAILED JACANA *Hydrophasianus chirurgus*
BRONZEWINGED JACANA *Metopidius indicus*
REDWATTLED LAPWING *Vanellus indicus*
YELLOW-WATTLED LAPWING *V. malabaricus*
LITTLE RINGED PLOVER *Charadrius dubius*
COMMON SANDPIPER *Tringa hypoleucos*
FANTAIL SNIPE *Gallinago gallinago*
PAINTED SNIPE *Rostratula benghalensis*
INDIAN STONE CURLEW *Burhinus oedicnemus*
INDIAN COURSER *Cursorius coromandelica*
INDIAN RIVER TERN *Sterna aurantia*
INDIAN SANDGROUSE *Pterocles exustus*
PAINTED SANDGROUSE *P. indicus*
SOUTHERN GREEN PIGEON *Treron phoenicoptera*
BLUE ROCK PIGEON *Columba livia*
RING DOVE *Streptopelia decaocto*
RED TURTLE-DOVE *S. tranquebarica*
SPOTTED DOVE *S. chinensis*
LITTLE BROWN DOVE *S. senegalensis*
LARGE INDIAN PARAKEET *Psittacula eupatria*
ROSERINGED PARAKEET *P. krameri*
BLOSSOMHEADED PARAKEET *P. cyanocephala*
PIED CRESTED CUCKOO *Clamator jacobinus*
COMMON HAWK-CUCKOO *Cuculus varius*
PLAINTIVE CUCKOO *Cacomantis merulinus*
KOEL *Eudynamys scolopacea*
CROW-PHEASANT *Centropus sinense*
BARN OWL *Tyto alba*
GREAT HORNED OWL *Bubo bubo*
BROWN FISH OWL *B. zeylonensis*
SPOTTED OWLET *Athene brama*
INDIAN NIGHTJAR *Caprimulgus asiaticus*
HOUSESWIFT *Apus affinis*
PALM SWIFT *Cypsiurus parvus*
PIED KINGFISHER *Ceryle rudis*
SMALL BLUE KINGFISHER *Alcedo atthis*
BLUECHEEKED BEE-EATER *Merops superciliosus*
SMALL GREEN BEE-EATER *M. orientalis*
ROLLER *Coracias benghalensis*
HOOPOE *Upupa epops*
CRIMSONBREASTED BARBET *Megalaima haemacephala*
GOLDENBACKED WOODPECKER *Dinopium benghalense*
MAHRATTA WOODPECKER *Picoides mahrattensis*
INDIAN PITTA *Pitta brachyura*
REDWINGED BUSH LARK *Mirafra erythroptera*
ASHYCROWNED FINCH-LARK *Eremopterix grisea*
RUFOUSTAILED FINCH-LARK *Ammomanes phoenicurus*
CRESTED LARK *Galerida cristata*
SMALL SKYLARK *Alauda gulgula*

WIRETAILED SWALLOW *H. smithii*
REDRUMPED SWALLOW *H. daurica*
BAYBACKED SHRIKE *Lanius vittatus*
RUFOUSBACKED SHRIKE *L. schach*
GOLDEN ORIOLE *Oriolus oriolus*
BLACKHEADED ORIOLE *O. xanthornus*
BLACK DRONGO *Dicrurus adsimilis*
WHITEBELLIED DRONGO *D. caerulescens*
ASHY SWALLOW-SHRIKE *Artamus fuscus*
COMMON MYNA *Acridotheres tristis*
INDIAN TREE PIE *Dendrocitta vagabunda*
HOUSE CROW *Corvus splendens*
JUNGLE CROW *C. macrorhynchos*
COMMON WOOD SHRIKE *Tephrodornis pondicerianus*
LARGE CUCKOO-SHRIKE *Coracina novaehollandiae*
BLACKHEADED CUCKOO-SHRIKE *C. melanoptera*
SMALL MINIVET *Pericrocotus cinnamomeus*
IORA *Aegithina tiphia*
GOLDFRONTED CHLOROPSIS *Chloropsis aurifrons*
REDVENTED BULBUL *Pycnonotus cafer*
WHITEBROWED BULBUL *P. luteolus*
RUFOUSBELLIED BABBLER *Dumetia hyperythra*
YELLOW-EYED BABBLER *Chrysomma sinense*
COMMON BABBLER *Turdoides caudatus*
LARGE GREY BABBLER *T. malcolmi*
TICKELL'S BLUE FLYCATCHER *Muscicapa tickelliae*
WHITESPOTTED FANTAIL FLYCATCHER *Rhipidura albicollis*
PARADISE FLYCATCHER *Terpsiphone paradisi*
STREAKED FANTAIL WARBLER *Cisticola juncidis*
PLAIN WREN-WARBLER *Prinia subflava*
ASHY WREN-WARBLER *P. socialis*
TAILOR BIRD *Orthotomus sutorius*
BLUETHROAT *Erithacus svecicus*
MAGPIE-ROBIN *Copsychus saularis*
BLACK REDSTART *Phoenicurus ochruros*
COLLARED BUSHCHAT *Saxicola torquata*
PIED BUSHCHAT *S. caprata*
INDIAN ROBIN *Saxicoloides fulicata*
BLUE ROCK THRUSH *Monticola solitarius*
WHITETHROATED GROUND THRUSH *Zoothera citrina*
YELLOWCHEEKED TIT *Parus xanthogenys*
CHESTNUTBELLIED NUTHATCH *Sitta castanea*
PADDYFIELD PIPIT *Anthus novaeseelandiae*
YELLOWHEADED WAGTAIL *Motacilla citreola*
GREY WAGTAIL *M. cinerea*
WHITE WAGTAIL *M. alba*
LARGE PIED WAGTAIL *M. maderaspatensis*
TICKELL'S FLOWERPECKER *Dicaeum erythrorhynchos*
PURPLERUMPED SUNBIRD *Nectarinia zeylonica*
PURPLE SUNBIRD *N. asiatica*
WHITE-EYE *Zosterops palpebrosa*
HOUSE SPARROW *Passer domesticus*
YELLOWTHROATED SPARROW *Petronia xanthocollis*
BAYA *Ploceus philippinus*
STREAKED WEAVER BIRD *Ploceus manyar*
RED MUNIA *Estrilda amandava*
WHITETHROATED MUNIA *Lonchura malabarica*
SPOTTED MUNIA *L. punctulata*
BLACKHEADED MUNIA *L. malacca*
INDIAN ROSEFINCH *Carpodacus erythrinus*
CRESTED BUNTING *Melophus lathami*
BLACKHEADED BUNTING *Emberiza melanocephala*

Bibliography 13/5/98

COLONEL RICHARD SPARROW, C.M.G., D.S.O. - AN APPRECIATION

AASHEESH PITTIE

Leafing through old bird literature from the erstwhile Hyderabad State, the name of Col. R. Sparrow comes up many times. He was an amateur zoologist and ornithologist in the traditional style. The reliability and accuracy of his observations, records and identifications prompted Dr. Salim Ali to refer to Col. Sparrow's notes repeatedly throughout his Hyderabad State ornithological survey, conducted during 1931-32. Dr. Salim Ali says in the introduction to that paper (Ali, 1933-34), "Our thanks are also due to Colonel R. Sparrow, C.M.G., D.S.O., for the loan of a large number of skins collected by him near Trimulgherry."

Despite a hectic and distinguished career in the British army, Col. Sparrow made time for a hobby which must have been close to his heart. In the final reckoning, he donated 412 skins of birds to the British Museum of Natural History. These he collected mainly from India, Africa, France and England. Quite a few of the birds he shot, and to which Dr Salim Ali refers in the Hyderabad Survey, are not in the British Museum of Natural History. I am not sure what became of his egg collection, but Dr. Salim Ali has used this extensively in his notes during the Hyderabad Survey.

We do not know much about his life, but a small obituary in The Times of 8th December 1953, read thus.

"Colonel Richard Sparrow, C.M.G., D.S.O., formerly commanding officer of the 7th Dragoon Guards, died at Colchester on Sunday. He was 82. The younger son of the late Basil Sparrow, of Halstead, Essex, he was born on June 10, 1871, and educated at Wellington and Sandhurst. He was gazetted to the 7th Dragoon Guards in 1892, attaining the rank of major in 1903 and colonel in 1918. He served in the South African War on the staff and also as Assistant Inspector of Remounts, and took part in operations in Natal, the Transvaal, and the orange River Colony. He was mentioned in dispatches and awarded the Queen's medal with three clasps and the King's medal with two clasps. In the 1914-18 War he served for four years in France, being twice mentioned in dispatches. In 1916 he was appointed C.M.G., and in 1918 he was awarded the D.S.O. He retired in 1920.

He married in 1918 Cecily Mabel, daughter of the late Major B.C. Garfit, of Spilsby Lincolnshire, and widow of Captain H.P.L. Heyworth. She died in 1940. There were no children of the marriage. He married as his second wife Dorothea Barbara, daughter of the late W.G. Jackson, of Duddington, Northamptonshire, and widow of Arthur B. Willson."

Though we know very little of his birdwatching experiences, we have a list of his specimens with the dates and localities from which he collected them. These are given below, along with relevant extracts from Dr. Salim Ali's Hyderabad Survey, where some of Col. Sparrow's sight records are also mentioned (and included here). We have to deduce whatever we can from this bare list.

BIRD SKINS PRESENTED BY COL. R. SPARROW TO THE BRITISH MUSEUM OF NATURAL HISTORY, WITH NOTES FROM DR. SALIM ALI'S HYDERABAD SURVEY REPORT

LITTLE GREBE *Tachybaptus ruficollis*
SA: "Col. Sparrow has taken several clutches of the Dabchick's eggs (usually 6) at Mulkaram, Eswantraopet and elsewhere, between 26 July and 9 September."
LARGE EGRET *Ardea alba*
SA: "Col. Sparrow has two eggs from Navipet, 10-8-1914."
POND HERON *Ardeola grayii*
SA: "At Navipet on 10-8-1914 Col. Sparrow found several nests with 3 or 4 eggs each at varying stages of incubation, and also large young."
BLACKWINGED KITE *Elanus caeruleus*
SA: "Col. Sparrow has seen it at Alwal and Masaipet."
CRESTED HONEY BUZZARD *Pernis ptilorhynchus*
SA: "Col. Sparrow has taken the following eggs: C/1 5-4-1913, C/1 6-6-1914 (both fresh). Eswantraopet; C/2 (hard set) 8-6-1914 Kamareddi."
PARIAH KITE *Milvus migrans*
SA: "Col. Sparrow took seven clutches of two eggs each in varying stages of incubation at Trimulgherry, between 8 November and 6 March."
BRAHMINY KITE *Haliastur indus indus*
M : Masaipet, Deccan : 25-11-1910
SA: "Col. Sparrow has 3 clutches of 2 eggs each taken at Mirzapalli and Masaipet between 25 January and 19 February."
SHIKRA *Accipiter badius dussumieri*
F? ? Deccan; M 1-12-1910 Manorabad, Deccan; M 10-1-1911 Limbgaon, Deccan.
SA: "Col. Sparrow took many clutches of the Shikra's eggs, usually 1 to 3, at Bezwada, Eswantraopet and elsewhere in the State, between 4 April and 2 June."
SPARROW-HAWK *Accipiter nisus*
SA: "Col. Sparrow has a sight record from Masaipet 3-12-1913."
WHITE-EYED BUZZARD-EAGLE *Butastur teesa*
F ?-1-1911 ?, Deccan; M 12-1-1911 Pingli, Deccan; F ad. 3-3-1912 Trimulgherry, Deccan.
SA: "Col. Sparrow, who found this species very common in the jungles about Eswantraopet, has taken numerous clutches of eggs in varying stages of freshness and incubation between 30 March and 5 May. Most nests contained two eggs, but some had three and occasionally there was only one."
CRESTED HAWK-EAGLE *Spizaetus cirrhatus cirrhatus*
F 14-3-1913 Eswantraopet, Deccan.
SA: "Col. Sparrow has taken 10 clutches of a single egg each in every stage of incubation, at Eswantraopet between 21 February and 3 May."
BONELLI'S EAGLE *Hieraaetus fasciatus*
SA: "Col. Sparrow took a clutch of 2 eggs at Navipet (?) on 2 January (1914)."
TAWNY EAGLE *Aquila rapax*

M 9-2-11 Karkeli, Deccan; M 1-2-1912 Trimulgherry, Deccan.
SA: "Col. Sparrow took a clutch of two eggs at Eswantraopet on 15 December (1913)."
GREATER SPOTTED EAGLE *Aquila clanga*
F ?-11-1892 Muttra, U.P.
KING VULTURE *Sarcogyps calvus*
SA: "Col. Sparrow took a fresh egg at Navipet (?) on 3-1-1914 and found young at Ramakapett (?) on 31-1-1914."
LONGBILLED VULTURE *Gyps indicus*
SA: "Col. Sparrow has taken eggs and young in various stages at Mulkaram and Eswantraopet between 7 January and 16 March."
WHITEBACKED VULTURE *Gyps bengalensis*
SA: "Col. Sparrow found nests with young at Kamareddi and Ramakapett on 28 January."
SCAVENGER VULTURE *Neophron percnopterus*
SA: "Col. Sparrow found several nests containing eggs and young (usually one or two) at Masaipet, Trimulgherry, Eswantraopet and elsewhere, between 20 February and 5 April. One egg on the last date was fresh."
PALE HARRIER *Circus macrourus*
? imm. 2-1-1911, M ad. 2-1-1911 Dichpalli, Deccan; M ad. 21-2-1911 Medchal, Deccan.
SA: noted by Col. Sparrow on 31-1-1911 at Partur.
MONTAGU'S HARRIER *Circus pygargus*
M juv. 16-12-1910 Wadiarum, Deccan
MARSH HARRIER *Circus aeruginosus*
SA: "Col. Sparrow procured the following : M 16-1-1913 Medohil (Madhol ?); M ad. 9-2-1913 Kupra (?); M F 9-11-1913 Chintakani Tank."
SHORT-TOED EAGLE *Circaetus gallicus*
SA: "Col. Sparrow has taken 3 clutches of a single egg each, at Eswantraopet between 28 January and 20 February."
OSPREY *Pandion haliaetus*
SA: "Col. Sparrow also has sight records from Bhiknur, Hussein Sagar Tank (Hyderabad city) and elsewhere between 25 November and 10 March."
PEREGRINE FALCON *Falco peregrinus*
SA: "Col. Sparrow has a sight record of one at Chintakani on 3-2-1913."
REDHEADED MERLIN *Falco chicquera*
SA: "Col. Sparrow saw it at Trimulgherry 6-11-1912 and shot a male at Jalna 21-1-1911."
BLACK PARTRIDGE *Francolinus francolinus melanonotus*
M 25-12-1892 Koila, U.P.
PAINTED PARTRIDGE *Francolinus pictus*
SA: "Col. Sparrow found nests with 3 and 5 eggs respectively on 1 and 30 August (1912) at Trimulgherry, and 2 nests with 5 fresh eggs each at Bezwada on 6-3-1912. The statement on p. 409, vol. v of the F.B.I., Birds (2nd edition), that Col. Sparrow found *Francolinus f. asiae* common near Trimulgherry is most certainly erroneous. As far as I am aware no material is available to support the assertion that this species occurs as far south as Hyderabad."
RAIN QUAIL *Coturnix coromandelica*
M 20-2-1911 Masaipet, Deccan; M 3-11-1912 Medchal, Deccan
JUNGLE BUSH QUAIL *Perdicula asiatica*
SA: "At Trimulgherry, Col. Sparrow took several clutches of up to 6 eggs between 24 August and 26 March."
PAINTED SPURFOWL *Galloperdix lunulata*
SA: "Col. Sparrow found several nests with eggs - usually 3, occasionally 4 - in varying stages of incubation, among the small rocky hillocks at Eswantraopet between March and August, mostly in May."

INDIAN PEAFOWL *Pavo cristatus*
SA: "Col. Sparrow took a clutch of 4 hard-set eggs by the Indravati River (C.P.) on 23-5-1912."
LITTLE BUSTARD-QUAIL *Turnix sylvatica dussumier*
M and F 5-12-1913 Bhiknoor, Deccan -- NEM
COMMON BUSTARD-QUAIL *Turnix suscitator taigoor*
2 M 3-1-1912 Andheri, Bombay.
PURPLE MOORHEN *Porphyrio porphyrio*
SA: "Col. Sparrow found 3 nests at Navipet on 26-8-1914 with 8, 5 and 4 eggs respectively, and one at Madaram on 30-11-1913 with 2 eggs."
COOT *Fulica atra*
SA: "On 11-8-1914 Col. Sparrow found 3 nests and on 14-8-1914 1 nest at Navipet containing 10, 8, 2 and 7 eggs respectively, while 2 nests at Eswantraopet on 29-8-1914 held 8 and 4 eggs each."
PHEASANT-TAILED JACANA *Hydrophasianus chirurgus*
SA: "Col. Sparrow found nests at Basar on 10 and 11 August 1914, containing 3, 4 and 2 eggs respectively."
REDWATTLED LAPWING *Vanellus indicus*
SA: "Col. Sparrow collected many clutches of 2-4 eggs at Eswantraopet, Trimulgherry and Navipet between 14 April and 15 August."
YELLOW-WATTLED LAPWING *Vanellus malabaricus*
SA: "Col. Sparrow took several clutches of 2-4 eggs each at Trimulgherry and Eswantraopet between 16 May and 6 June,..."
LITTLE RINGED PLOVER *Charadrius dubius*
SA: "Col. Sparrow took clutches of 3 fresh eggs each at Bezwada on 14 February (1914) and 20 March (1913). Another C/3 was on the point of hatching on 8 April (1913)."
GREAT STONE PLOVER *Esacus magnirostris*
SA: "Col. Sparrow found nests with eggs - one or two - in various stages of freshness and incubation on the Godavari River at Bezwada between 12 and 14 February (1914), and large young on 22-3-1914."
SMALL INDIAN PRATINCOLE *Glareola lactea*
SA: "Col. Sparrow collected 10 clutches of 1-4 fresh eggs each (some doubtless incomplete) at Bezwada between 21 and 22 March 1913."
INDIAN RIVER TERN *Sterna aurantia*
SA: "Col. Sparrow took a clutch of 3 fresh eggs and another of 2, on 6-3-1912 at Bezwada (Madras Presidency), and 3 more clutches (fresh) at the same place on 22-3-1913. In the Central Provinces he found 2 hard set eggs on 19-5-1912 on the Indravati River and notes that by that time the majority of young had flown."
BLACKBELLIED TERN *Sterna acuticauda*
SA: "Col. Sparrow has taken several clutches of 1-3 eggs (mostly 3) at Bezwada between 26 February and 7 April. He found a brood of 3 young, about 7 days old, on the Indravati River (Central Provinces) on 18 May (1912)."
INDIAN SKIMMER *Rynchops albicollis*
SA: "Col. Sparrow found it breeding at Bezwada in the Madras Presidency and on the Indravati River in the Central Provinces, and took eggs in varying stages of freshness and incubation between 6 April and 19 May, by which latter date the majority of young had flown. The earliest date on which he saw flying young was 21 March (1913 - Bezwada)."
INDIAN SANDGROUSE *Pterocles exustus*
SA: "Col. Sparrow has taken 2 fresh eggs at Omri (?) Deccan on 8-2-1911, and found 4 nests containing young, about a fortnight old, at the same place on 16-2-1914."
PAINTED SANDGROUSE *Pterocles indicus*
F 25-12-1892 Badduppur, U.P.
SA: "Col. Sparrow found nests and eggs in thin jungle about Eswantraopet as follows: 1 in January, 1 in

February, 2 in March, 3 in April and 3 in May."
GREEN IMPERIAL PIGEON *Ducula aenea*
SA: "Noted also at Kamlapur near Sironcha (Col. Sparrow 6-6-1912 !)."
RING DOVE *Streptopelia decaocto*
SA: "Col. Sparrow has taken eggs at various places in the Deccan in all months between 11 January and 26 August except June and July."
RED TURTLE-DOVE *Streptopelia tranquebarica*
SA: "Col. Sparrow has records of eggs from various places in the Deccan for January, February, March and November."
SPOTTED DOVE *Streptopelia chinensis*
SA: "Col. Sparrow has taken eggs at Trimulgherry between 31 October and 9 May."
LITTLE BROWN DOVE Streptopelia senegalensis
SA: "Col. Sparrow has taken eggs of this species at Trimulgherry between 12 April and 28 August."
PIED CRESTED CUCKOO *Clamator jacobinus*
Mad. 23-10-1910, Mimm. 5-12-1910, Fimm. 9-12-1910, Fad. 13-6-1911, Fad. 15-6-1911 Trimulgherry, Deccan.
COMMON HAWK-CUCKOO *Cuculus varius*
SA: "The Sparrow Coll. contains the following: M 31-1-1912, M 1-2-1912, M26-2-1911 Trimulgherry."
CUCKOO *Cuculus canorus*
SA: "The Sparrow Collection contains a specimen of Cuculus canorus labeled: F22-9-1912 Trimulgherry."
PLAINTIVE CUCKOO *Cacomantis merulinus*
SA: "The Sparrow Coll. contains the following: M 30-11-1910, M F 16-6-1911 Trimulgherry."
SIRKEER CUCKOO *Taccocua leschenaultii*
SA: "The Sparrow Coll. contains F 22-12-? Trimulgherry."
CROW-PHEASANT *Centropus sinensis*
SA: "The Sparrow Coll. contains: F 10-1-1911 Limbgaon, Deccan F 20-2-1911 Masaipet, Deccan."
BARN OWL *Tyto alba stertens*
M 23-6-1911 Moula Ali, Deccan.
SA: Dr. Salim Ali did not obtain a specimen during the Survey.
COLLARED SCOPS OWL *Otus bakkamoena*
SA: "Col. Sparrow's collector obtained 2 clutches for him (not supported by specimen of parent !) of 4 and 3 eggs respectively on 21 February and 2 April (the latter hard-set) at Eswantraopet."
GREAT HORNED OWL *Bubo bubo*
SA: "Col. Sparrow took a clutch of 4 eggs at Eswantraopet on 5-11-1914, and found large young at Masaipet on 5 January."
BROWN FISH-OWL *Bubo zeylonensis*
SA: "Col. Sparrow has a record of pair at Mulloorpet on 28-1-1914 and two fledged young at Eswantraopet on 14-3-1913. He also took a fresh egg at the latter place on 28-1-1914."
JUNGLE OWLET *Glaucidium radiatum radiatum*
M 23-4-1912 Malappuram, Madras; F 13-5-1912 Kimmergut, C.P.
BROWN HAWK-OWL *Ninox scutulata lugubris*
M 8-9-1912 Malappuram, Madras
SPOTTED OWLET *Athene brama indica*
M 22-1-1911 Jalna, Deccan; M 8-3-1913 Trimulgherry, Deccan; M 1-1-1914 Naigaon, C.P.
SA: "Col. Sparrow has taken eggs in all stages of incubation and chicks (2 to 4 as a rule) at Trimulgherry, Nekonda and Rampoor between 11 March and 10 April."
MOTTLED WOOD OWL *Strix ocellata*
SA: "Col. Sparrow's coll. contains the followings eggs: C/2 31-12-1913 Navipet, C/1 7-3-1914, C/1 1-4-1914 Eswantraopet."
SHORTEARED OWL *Asio flammeus flammeus*

M 31-1-1911 Partur, Deccan.

JUNGLE NIGHTJAR *Caprimulgus indicus*

SA: "The Sparrow Coll. contains F 1-11-1910 Trimulgherry...Col. Sparrow's shikari collected the following eggs for him (presumably of this species) at Eswantraopet, about 25 miles N.-W. of Trimulgherry in thin jungle: C/2 19-4-1914, C/1 27-4-1914, C/2 6-5-1914, C/1 24-5-1914."

COMMON INDIAN NIGHTJAR *Caprimulgus asiaticus asiaticus*

F 12-12-1912 Trimulgherry, Deccan.

SA: "Col. Sparrow's collector obtained 11 clutches of one or two eggs each in thin jungle at Eswantraopet between 19 April and 7 July."

FRANKLIN'S NIGHTJAR *Caprimulgus affinis monticolus*

F 16-12-1910 Wadiaram, Deccan; M 2-1-1911 Dichpalli, Deccan.

SA: "Col. Sparrow's collector obtained the following eggs for him (unconfirmed by skin of parent !): C/2 (fresh) 23-7-1912 Trimulgherry, C/2 30-7-1912, C/2 15-3-1913 Eswantraopet. Col. Sparrow himself found the following in the Central Provinces: C/2 (fresh) 3-5-1912 Muthpalli, C/2 (hatching) 20-5-1912 Indravati River."

ROLLER *Coracias benghalensis*

SA: "The Sparrow Coll. contains M 1-11-1910, M 25-11-1910, M 16-1-1913 Trimulgherry."

WRYNECK *Jynx torquilla torquilla*

F 9-1-1911 Nanded, Deccan; F 9-3-1911, F 7-11-1912 Trimulgherry, Deccan.

MAHRATTA WOODPECKER *Picoides mahrattensis*

SA: "The Sparrow Collection has M F 25-1-1911 Jalna."

BLACKBACKED WOODPECKER *Chrysocolaptes festivus*

SA: "No specimen obtained, but Col. Sparrow's collection has a F (evidently immature) 19-2-1911 Mirzapalli, Deccan."

SINGING BUSH LARK *Mirafra javanica*

SA: "A specimen in the Sparrow Collection is labeled as follows: F 5-8-1912 Trimulgherry. According to the collector it is a common resident species in this locality.....while at Trimulgherry Colonel Sparrow has taken eggs between 9 April and 18 May. He considers April to be the best month for them. As, however, there is no mention of *Mirafra affinis* at all in his MS. notes, the above records must be accepted with caution."

MADRAS BUSH LARK *Mirafra affinis*

SA: "Also examined: M 3-3-1912 Trimulgherry (Sparrow Coll.)".

REDWINGED BUSH LARK *Mirafra erythroptera*

M 3-3-1912 Trimulgherry, Deccan.

SA: Inexplicably, Dr. Salim Ali's paper has the following dates for specimens from the Sparrow Collection. "M : 11-11-1910, M : 12-3-1911 : Trimulgherry."

"Col. Sparrow, who found this a common resident species at Trimulgherry, took nests between 13 March and 9 June, principally during April and May."

ASHYCROWNED FINCH-LARK *Eremopterix grisea*

SA: "..in the neighborhood of Trimulgherry Col. Sparrow found nests between 19 October and 29 April. He considers November and April the best months for eggs."

RUFOUSTAILED FINCH-LARK *Ammomanes phoenicurus phoenicurus*

M 13-1-1911 ?, Deccan; F 18-1-1911 ?, Deccan; F 21-12-1911 Bombay, India.

SA: "Col. Sparrow found nests of this species between 28 February and 18 April."

SHORT-TOED LARK *Calandrella cinerea longipennis*

M 21-12-1911 Bhyunder, Bombay.

SHORT-TOED LARK *Calandrella cinerea dukhunensis*

F 22-2-1911 Limboron, Deccan; F 8-2-1912 Trimulgherry, Deccan.

EASTERN CALANDRA LARK *Melanocorypha bimaculata*

M 31-12-1911 Bombay, India.
SYKES'S CRESTED LARK *Galerida deva*
F 27-10-1910, M 18-7-1912 Trimulgherry, Deccan.
SA: "Col. Sparrow found this species breeding in the neighborhood of Trimulgherry between 12 March and 25 September, chiefly during July and August when he took most eggs."
WIRETAILED SWALLOW *Hirundo smithii*
SA: "M 15-2-1911, F 17-2-1911 Malapet and Bhiknur (Sparrow Collection)."
INDIAN CLIFF SWALLOW *Hirundo fluvicola*
M and F 14-11-1910 Trimulgherry, Deccan; F 3-2-1911 Purnah, Deccan; F 17-2-1911 Bhiknur, Deccan.
REDRUMPED SWALLOW *Hirundo daurica*
SA: "M 25-1-1911 Jalna, in Sparrow Collection."
BAYBACKED SHRIKE *Lanius vittatus*
SA: "Col. Sparrow found nests at Trimulgherry from 20 February to 14 June. He considers March and April, as the best months for them."
RUFOUSBACKED SHRIKE *Lanius schach caniceps*
M 25-10-1910, F 29-10-1910, F 19-11-1910 Trimulgherry, Deccan.
BROWN SHRIKE *Lanius cristatus*
SA: "I have seen other specimens from Hyderabad in Col. Sparrow's collection as follows: M 6-11-1912, M 9-12-1910 Trimulgherry; m 10-12-1910 Nadiarum and M 18-2-1911 Mirzapalli."
GOLDEN ORIOLE *Oriolus oriolus kundoo*
M 13-6-1911, 2 M no date Trimulgherry, Deccan.
SA: "Col. Sparrow, who describes it as a common resident about Trimulgherry, took eggs between 25 June and 21 July, but found that most clutches had hatched by mid-July."
BLACKHEADED ORIOLE *Oriolus xanthornus*
F ?-?-1892 Andheri, Bombay.
BLACK DRONGO *Dicrurus adsimilis*
? ?-1-1892 Muttra, U.P.; M 2-12-1910 Mancrabad, Deccan; M 11-10-1912, F 30-10-1912 Trimulgherry, Deccan.
GREY DRONGO *Dicrurus leucophaeus*
F 10-11-1912 Malappuram, Madras; F 14-12-1911 Elephanta Is., Bombay; M 7-1-1912 Matheran, Bombay.
WHITEBELLIED DRONGO *Dicrurus caerulescens*
F 14-12-1911 Matheran, Bombay; M 1-1-1913 Naigaon, C.P.
SA: "Also (noted) at Trimulgherry and Eswantraopet by Col. Sparrow."
GREATER RACKET-TAILED DRONGO *Dicrurus paradiseus*
F 11-4-1912, 5-5-1912 Mallapuram, Madras.

BRAHMINY MYNA *Sturnus pagodarum*
SA: "At Trimulgherry, Col. Sparrow has taken eggs between 10 May and 17 June."
PIED MYNA *Sturnus contra*
? ?-?-1892 Muttra, U. Prov.
COMMON MYNA *Acridotheres tristis*
?? 28-8-1892 Muttra, U. Prov.; M 4-11-1910, F 27-11-1910 Trimulgherry, Deccan.
SA: "The Sparrow collection contains 4 specimens from Trimulgherry." "At Trimulgherry Col. Sparrow obtained eggs between 13 June and 1 July."
BANK MYNA *Acridotheres ginginianus*
? ?-?-1892 Muttra, U. Prov.
HILL MYNA *Gracula religiosa*
M 6-3-1914 Cardamom Hills, Madras.

INDIAN TREE PIE *Dendrocitta vagabunda*

SA: "...specimens from Eswantraopet, Pattencheru, Mukhaid and Mallapet which Col. Sparrow has kindly lent to me, are still very close to vernayi but already show traces of the passage into the larger *pallidus* on the N.-West." "Col. Sparrow found it breeding commonly in the jungles 15-30 miles N.-W. of Trimulgherry where he obtained eggs from 27 April to 12 July. He considers the second half of June as the best time for fresh eggs."

COMMON WOOD SHRIKE *Tephrodornis pondicerianus*

SA: "Common at Trimulgherry (Col. Sparrow)." "Col. Sparrow considers April as the best month for eggs in the neighborhood of Trimulgherry."

LARGE CUCKOO-SHRIKE *Coracina novaehollandiae macei*

M 15-2-1911 Mallapet, Deccan; F 26-7-1912 Malappuram, Deccan: 29-12-1912 Naigaon. Seone Range, C.P.

SA: "Col. Sparrow found it common in the cantonments at Trimulgherry in the cold weather but thinks that it returns to the jungles in the hot weather and rains, as he never succeeded in getting a nest."

BLACKHEADED CUCKOO-SHRIKE *Coracina melanoptera sykesi*

M 5-5-1911, F 14-11-1912 Trimulgherry, Deccan.

SCARLET MINIVET *Pericrocotus flammeus*

2 M 25-3-1914 Cardamom Hills, Travancore.

SMALL MINIVET *Pericrocotus cinnamomeus*

F 14-12-1912 Elephanta Is., Bombay; F 3-11-1910. M 6-11-1910, M 9-12-1912 Trimulgherry, Deccan.

SA: "At Trimulgherry Col. Sparrow found nests between 22 June and 25 August. He considers the end of June and July the best time for eggs."

WHITEBELLIED MINIVET *Pericrocotus erythropygius*

F 26-12-1910 Medchal, Deccan; M 14-3-1913 Eswantraopet, Deccan.

SA: "Col. Sparrow took a clutch of 3 fresh eggs on 9-8-1914 and found young in another nest on 16-8-1914 in the jungle about 25 miles N.-W. of Trimulgherry."

COMMON IORA *Aegithina tiphia*

M 3-11-1910, M 9-11-1910, F 24-2-1911, M ?-4-1911, Trimulgherry, Deccan; M 17-2-1911 Bhirniir, Deccan.

SA: "Col. Sparrow found the Iora very common in and around Trimulgherry and also in the Eswantraopet jungles, where he took eggs from 6 April to 11 September. He considers July and August the best months for fresh eggs. On 20 July, he found three nests with young."

GOLDMANTLED CHLOROPSIS *Chloropsis cochinchinensis*

SA: "In the Eastern Ghats Report (J.B.N.H.S., xxxv. p. 752) it is stated that Col. Sparrow found *Chloropsis aurifrons insularis* breeding about Eswantraopet near Secunderabad from the end of June to the middle of August, but that most eggs were obtained in early July. On enquiry, Mr. Whistler informs em that Col. Sparrow's collection contained no specimen of *aurifrons* from any part of Hyderabad and that in his breeding notes for this area he does not give *jerdoni* at all ! As I myself failed to come across *aurifrons* in any of the localities surveyed it is clear that Col. Sparrow has been under a misapprehension and that his information as regards nesting really relates to *jerdoni*."

FAIRY BLUEBIRD *Irena puella puella*

M 24-4-1912 Malappuram, Madras; M 14-3-1914 Cardamom Hills, Travancore.

REDWHISKERED BULBUL Pycnonotus jocosus fuscicaudatus

F 6-1-1912, M and F 7-1-1912 Matheran, Bombay.

REDVENTED BULBUL *Pycnonotus cafer cafer*

F 10-11-1910, F 8-12-1910, ? ?-1-1911 Trimulgherry, Deccan; F 30-12-1912 Naigaon, Cen. Provinces; F 26-12-1911, M 3-1-1912 Andheri, Bombay.

WHITEBROWED BULBUL *Pycnonotus luteolus luteolus*

M 8-7-1912 Malappuram, Madras; M 25-1-1912 Trimulgherry, Deccan.

YELLOWBROWED BULBUL *Hypsipetes indicus ictericus*

M 23-3-1914 Cardamom Hills, Travancore.

SA: "Col. Sparrow found nests and eggs in thin jungle about Eswantraopet as follows: 1 in January, 1 in February, 2 in March, 3 in April and 3 in May."
GREEN IMPERIAL PIGEON *Ducula aenea*
SA: "Noted also at Kamlapur near Sironcha (Col. Sparrow 6-6-1912 !)."
RING DOVE *Streptopelia decaocto*
SA: "Col. Sparrow has taken eggs at various places in the Deccan in all months between 11 January and 26 August except June and July."
RED TURTLE-DOVE *Streptopelia tranquebarica*
SA: "Col. Sparrow has records of eggs from various places in the Deccan for January, February, March and November."
SPOTTED DOVE *Streptopelia chinensis*
SA: "Col. Sparrow has taken eggs at Trimulgherry between 31 October and 9 May."
LITTLE BROWN DOVE Streptopelia senegalensis
SA: "Col. Sparrow has taken eggs of this species at Trimulgherry between 12 April and 28 August."
PIED CRESTED CUCKOO *Clamator jacobinus*
Mad. 23-10-1910. M imm. 5-12-1910, F imm. 9-12-1910, Fad. 13-6-1911, Fad. 15-6-1911 Trimulgherry, Deccan.
COMMON HAWK-CUCKOO *Cuculus varius*
SA: "The Sparrow Coll. contains the following: M 31-1-1912, M 1-2-1912, M 26-2-1911 Trimulgherry."
CUCKOO *Cuculus canorus*
SA: "The Sparrow Collection contains a specimen of Cuculus canorus labeled: F 22-9-1912 Trimulgherry."
PLAINTIVE CUCKOO *Cacomantis merulinus*
SA: "The Sparrow Coll. contains the following: M 30-11-1910, M F 16-6-1911 Trimulgherry."
SIRKEER CUCKOO *Taccocua leschenaultii*
SA: "The Sparrow Coll. contains F 22-12-? Trimulgherry."
CROW-PHEASANT *Centropus sinensis*
SA: "The Sparrow Coll. contains: F 10-1-1911 Limbgaon, Deccan F 20-2-1911 Masaipet, Deccan."
BARN OWL *Tyto alba stertens*
M 23-6-1911 Moula Ali, Deccan.
SA: Dr. Salim Ali did not obtain a specimen during the Survey.
COLLARED SCOPS OWL *Otus bakkamoena*
SA: "Col. Sparrow's collector obtained 2 clutches for him (not supported by specimen of parent !) of 4 and 3 eggs respectively on 21 February and 2 April (the latter hard-set) at Eswantraopet."
GREAT HORNED OWL *Bubo bubo*
SA: "Col. Sparrow took a clutch of 4 eggs at Eswantraopet on 5-11-1914, and found large young at Masaipet on 5 January."
BROWN FISH-OWL *Bubo zeylonensis*
SA: "Col. Sparrow has a record of pair at Mulloorpet on 28-1-1914 and two fledged young at Eswantraopet on 14-3-1913. He also took a fresh egg at the latter place on 28-1-1914."
JUNGLE OWLET *Glaucidium radiatum radiatum*
M 23-4-1912 Malappuram, Madras; F 13-5-1912 Kimmergut, C.P.
BROWN HAWK-OWL *Ninox scutulata lugubris*
M 8-9-1912 Malappuram, Madras
SPOTTED OWLET *Athene brama indica*
M 22-1-1911 Jalna, Deccan; M 8-3-1913 Trimulgherry, Deccan; M 1-1-1914 Naigaon, C.P.
SA: "Col. Sparrow has taken eggs in all stages of incubation and chicks (2 to 4 as a rule) at Trimulgherry, Nekonda and Rampoor between 11 March and 10 April."
MOTTLED WOOD OWL *Strix ocellata*
SA: "Col. Sparrow's coll. contains the followings eggs: C/2 31-12-1913 Navipet, C/1 7-3-1914, C/1 1-4-1914 Eswantraopet."

SHORTEARED OWL *Asio flammeus flammeus*
M 31-1-1911 Partur, Deccan.
JUNGLE NIGHTJAR *Caprimulgus indicus*
SA: "The Sparrow Coll. contains F 1-11-1910 Trimulgherry...Col. Sparrow's shikari collected the following eggs for him (presumably of this species) at Eswantraopet, about 25 miles N.-W. of Trimulgherry in thin jungle: C/2 19-4-1914, C/1 27-4-1914, C/2 6-5-1914, C/1 24-5-1914."
COMMON INDIAN NIGHTJAR *Caprimulgus asiaticus asiaticus*
F 12-12-1912 Trimulgherry, Deccan
SA: "Col. Sparrow's collector obtained 11 clutches of one or two eggs each in thin jungle at Eswantraopet between 19 April and 7 July."
FRANKLIN'S NIGHTJAR *Caprimulgus affinis monticolus*
F 16-12-1910 Wadiaram, Deccan; M 2-1-1911 Dichpalli, Deccan.
SA: "Col. Sparrow's collector obtained the following eggs for him (unconfirmed by skin of parent !): C/2 (fresh) 23-7-1912 Trimulgherry, C/2 30-7-1912, C/2 15-3-1913 Eswantraopet. Col. Sparrow himself found the following in the Central Provinces: C/2 (fresh) 3-5-1912 Muthpalli, C/2 (hatching) 20-5-1912 Indravati River."
ROLLER *Coracias benghalensis*
SA: "The Sparrow Coll. contains M 1-11-1910, M 25-11-1910, M 16-1-1913 Trimulgherry."
WRYNECK *Jynx torquilla torquilla*
F 9-1-1911 Nanded, Deccan; F 9-3-1911, F 7-11-1912 Trimulgherry, Deccan.
MAHRATTA WOODPECKER *Picoides mahrattensis*
SA: "The Sparrow Collection has M F 25-1-1911 Jalna."
BLACKBACKED WOODPECKER *Chrysocolaptes festivus*
SA: "No specimen obtained, but Col. Sparrow's collection has a F (evidently immature) 19-2-1911 Mirzapalli, Deccan."
SINGING BUSH LARK *Mirafra javanica*
SA: "A specimen in the Sparrow Collection is labeled as follows: F 5-8-1912 Trimulgherry. According to the collector it is a common resident species in this locality.....while at Trimulgherry Colonel Sparrow has taken eggs between 9 April and 18 May. He considers April to be the best month for them. As, however, there is no mention of *Mirafra affinis* at all in his MS. notes, the above records must be accepted with caution."
MADRAS BUSH LARK *Mirafra affinis*
SA: "Also examined: M 3-3-1912 Trimulgherry (Sparrow Coll.)".
REDWINGED BUSH LARK *Mirafra erythroptera*
M 3-3-1912 Trimulgherry, Deccan.
SA: Inexplicably, Dr. Salim Ali's paper has the following dates for specimens from the Sparrow Collection. "M : 11-11-1910, M : 12-3-1911 : Trimulgherry."
"Col. Sparrow, who found this a common resident species at Trimulgherry, took nests between 13 March and 9 June, principally during April and May."
ASHYCROWNED FINCH-LARK *Eremopterix grisea*
SA: "..in the neighborhood of Trimulgherry Col. Sparrow found nests between 19 October and 29 April. He considers November and April the best months for eggs."
RUFOUSTAILED FINCH-LARK *Ammomanes phoenicurus phoenicurus*
M 13-1-1911 ?, Deccan; F 18-1-1911 ?, Deccan; F 21-12-1911 Bombay, India.
SA: "Col. Sparrow found nests of this species between 28 February and 18 April."
SHORT-TOED LARK *Calandrella cinerea longipennis*
M 21-12-1911 Bhyunder, Bombay.
SHORT-TOED LARK *Calandrella cinerea dukhunensis*
F 22-2-1911 Limboroo, Deccan; F 8-2-1912 Trimulgherry, Deccan.

SPOTTED BABBLER *Pellorneum ruficeps ruficeps*
F 7-1-1912 Matheran, Bombay.
RUFOUS BELLIED BABBLER *Dumetia hyperythra albogularis*
F 18-3-1914 Cardamom Hills, Madras.
RUFOUS BELLIED BABBLER *Dumetia hyperythra hyperythra*
M and F 16-3-1911 Mulkaram, Deccan; M 24-3-1912 Eswantraopet, Deccan.
SA: The series of birds collected by Dr. Salim Ali "was supplemented by the loan of 5 specimens from Mulkaram and Eswantraopet from Colonel Sparrow.... Col. Sparrow's birds are typical *hyperythra*." Of the 5 specimens which Dr. Ali referred to, 3 are with the British Museum. "Col. Sparrow, who found this bird very common in the Eswantraopet jungles near Secunderabad and also near the Hyderabad Residency, obtained eggs between 22 June and 31 August. He considers July to mid-August as the best time for fresh eggs." The Residency is now one of the busiest areas in the city, popularly known as Koti, and the Residency building has been converted into a college for women. The gardens within its large campus are still maintained by the concerned authorities.
BLACKHEADED BABBLER *Rhopocichla atriceps bourdilloni*
M 14-3-1914 Cardamom Hills, Travancore.
YELLOWEYED BABBLER *Chrysomma sinense sinensis*
M 5-4-1911, M 21-1-1912 Trimulgherry, Deccan.
SA: "Col. Sparrow obtained eggs from 2 July to 22 September in the scrub and grass country near Trimulgherry and in the Eswantraopet jungles where this Babbler was very common. He considers August to be the best time for fresh eggs."
COMMON BABBLER *Turdoides caudatus*
SA: "In the neighborhood of Trimulgherry, Col. Sparrow found eggs from 2 March to 11 July. According to him, March is the best month for fresh eggs in that locality."
QUAKER BABBLER *Alcippe poioicephala*
M 7-1-1912, F 8-1-1912 Matheran, Bombay
TICKELL'S BLUE FLYCATCHER *Muscicapa tickelliae tickelliae*
? ?-?-1912 Eswantraopet, Deccan.
SA: "Col. Sparrow found it breeding about Secunderabad in June and July (nests from 20th June to 30th July)".
VERDITER FLYCATCHER *Muscicapa thalassina melanops*
F 6-1-1912 Matheran, Bombay.
WHITEBROWED FANTAIL FLYCATCHER *Rhipidura aureola aureola*
M 29-12-1912 Naigaon, Cen. Prov.
WHITEBROWED FANTAIL FLYCATCHER *Rhipidura aureola compressirostris*
F 7-4-1912 Eswantraopet, Deccan.
PARADISE FLYCATCHER *Terpsiphone paradisi paradisi*
M 8-1-1912 Matheran, Bombay; M 16-3-1912 Malappuram, Malabar; F 5-5-1912 Cen. Prov.
SA: "According to Col. Sparrow this bird is fairly common in both jungles and cantonments near Trimulgherry. He found nests in that locality between 30th June and 24th August."
STREAKED FANTAIL WARBLER *Cisticola juncidis cursitans*
F 19-9-1912 Trimulgherry, Deccan.
SA: "Col. Sparrow has taken eggs between 18 August and 18 September at Trimulgherry."
FRANKLIN'S WREN-WARBLER *Prinia hodgsonii*
SA: "Col. Sparrow, who found it breeding commonly in the neighborhood of Trimulgherry, obtained eggs between 11 July and 25 August."
RUFOUS FRONTED WREN-WARBLER *Prinia buchanani*
M 23-9-1912 Trimulgherry, Deccan.
PLAIN WREN-WARBLER *Prinia subflava franklini*
M 10-12-1910 Wadiarum, Deccan; M 21-3-1911, M 2-2-12, ? 3-7-1912, F 14-9-1912, M 11-11-1912

Trimulgherry. Deccan.
SA: "Col. Sparrow has taken eggs at Trimulgherry between 18 July and 9 October, but considers August-September as the best time for them."
ASHY WREN-WARBLER *Prinia socialis socialis*
M 2-4-1911, M 3-4-1911 Trimulgherry, Deccan.
SA: "...at Col. Sparrow obtained eggs mostly between 21 June and 24 August."
TAILOR BIRD *Orthotomus sutorius sutorius*
M 29-3-1911, M 7-2-1912 Trimulgherry, Deccan.
SA: "Additional specimens examined from Trimulgherry (Sparrow) .."
THICKBILLED WARBLER *Acrocephalus aedon aedon*
M 22-12-1912 Malappuram, S. Malabar.
INDIAN GREAT REED WARBLER *Acrocephalus stentoreus brunnescens*
M 10-11-1912 Trimulgherry, Deccan.
SA: "Also Trimulgherry and Chinapur on 10.11.1912 and Chintakani on 4.2.1913 (Sparrow)."
BOOTED WARBLER *Hippolais caligata rama*
M 4-2-1911 Limbgaon, Deccan; M and F 17-3-1912 Trimulgherry, Deccan.
SA: "The Sparrow collection contains the following specimens: M 17-1-1912, F 17-3-1912 Trimulgherry."
BOOTED WARBLER *Hippolais caligata caligata*
M 27-3-1911, M 3-3-1912 Trimulgherry, Deccan.
ORPHEAN WARBLER *Sylvia hortensis jerdoni*
F 18-1-1913, M 1-11-1913 Trimulgherry, Deccan.
SA: "The following specimens in Col. Sparrow's collection extend the above dates." ie., the dates of specimens collected by Dr. Salim Ali.
LESSER WHITETHROAT *Sylvia curruca blythi*
M 15-11-1912 Trimulgherry, Deccan.
SA: "Col. Sparrow's collection contains the following specimens from Hyderabad: M 15-11-1912, M 26-1-1912 Trimulgherry, M 25-1-1911 Jalna." This entry is under the race *affinis*.
PLAIN LEAF WARBLER *Phylloscopus inornatus humei*
? 14-12 1911 Elephanta, Bombay; M 6-1-1912 Matheran, Bombay; F 3-11-1912 Medchal, Hyderabad.
DULL GREEN LEAF WARBLER *Phylloscopus trochiloides viridanus*
F 2-11-1910, M 5-11-1910, F 9-11-1912 Trimulgherry, Deccan.
BLUETHROAT *Erithacus svecicus*
SA: "Three skins kindly lent to me by Col. Sparrow from Kharkeli, Trimulgherry and Chintakani evidently belong to the same form as this series." (of birds which Dr. Salim Ali collected).
MAGPIE-ROBIN *Copsychus saularis saularis*
F 27-10-1910, 22-11-1910 Trimulgherry, Deccan; F 17-2-1911 Bhiknur, Deccan; 18-2-1911 Mirzapulli, Deccan; M 22-7-1922 Malappuram. Deccan ; M 8-1-1914 Matheran, Bombay.
SA: "Col. Sparrow found nests round Trimulgherry from 10 May to 12 July, the majority being in May and June."
PIED BUSHCHAT *Saxicola caprata*
SA: "Col. Sparrow found it breeding very commonly near Trimulgherry where he obtained eggs between 23 March and 23 June."
INDIAN ROBIN *Saxicoloides fulicata*
M 26-10-1910, M 18-1-1913 Trimulgherry, Deccan.
SA: "The series obtained (by Salim Ali) agreeing with seven specimens from Trimulgherry and Dichpalli kindly lent to me by Col. Sparrow,..."
BLUEHEADED ROCK THRUSH *Monticola cinclorhynchus*
M 7-1-1912 Bombay.
WHITETHROATED GROUND THRUSH *Zoothera citrina cyanotus*
M 6-1-1912 Matheran, Bombay; F 28-3-1914 Cardamom Hills, Travancore.

SA: "At Eswantraopet, where it is fairly common, Col. Sparrow found 2 eggs on 10 June, and young on 6 August."

GREY TIT *Parus major*

SA: "Col. Sparrow obtained eggs in the Eswantraopet jungles, near Secunderabad, between 5 July and 15 August. On 22nd July he found three nests with young."

CHESTNUTBELLIED NUTHATCH *Sitta castanea*

SA: 'Col. Sparrow, who found these Nuthatches fairly common in the Eswantraopet jungles near Secunderabad, observed a pair building on 4 April and took fresh eggs on 22 July."

TREE PIPIT *Anthus trivialis trivialis*

SA: "Other specimens from Hyderabad State in the Sparrow Collection are as follows: F 28-1-1912, F 2-11-1912 Trimulgherry; ? 20-12-1910 Medchal; M 23-1-1911 Jalna."

TAWNY PIPIT *Anthus campestris*

SA: "Col. Sparrow's collection contains the following: MM 27-10-1910 Trimulgherry."

GREYHEADED YELLOW WAGTAIL *Motacilla flava thunbergi*

SA: "Two males, not however in full plumage, in the Sparrow Collection collected at Trimulgherry on 5-11-1912 and 10-11-1910 appear to belong to this form."

BLUEHEADED YELLOW WAGTAIL *Motacilla flava beema*

SA: "Other specimens from Trimulgherry in the Sparrow Collection are as follow: M 16-3-1911, MM 21-3-1911, M 26-3-1911."

YELLOWHEADED WAGTAIL *Motacilla citreola werae*

SA: "Other specimens from Hyderabad in the Sparrow Collection as follows: M 6-11-1912, M 8-11-1912, M 7-11-1912, M 16-3-1911, F ?-3-1911 Trimulgherry.

WHITE WAGTAIL *Motacilla alba*

SA: "The Sparrow Collection contains the following: F 26-3-1911, F 11-11-1912 Trimulgherry; F 25-1-1911 Jalna; F 10-2-1911 Basar."

TICKELL'S FLOWERPECKER *Dicaeum erythrorhynchos*

SA: "There is a specimen, F 15-3-1913 from Eswantraopet in the Sparrow Collection."

PURPLERUMPED SUNBIRD *Nectarinia zeylonica*

M 4-12-1910, F 24-2-1911, M 28-2-1911, F ? Trimulgherry, Deccan; M and F 14-6-1912 Malappuram, Madras.

SA: "F juv., 18-11-1910 Trimulgherry, Deccan".

PURPLE SUNBIRD *Nectarinia asiatica asiatica*

F 28-2-1911, M 18-3-1911, 2M 25-3-1911 Trimulgherry, Deccan.

WHITE-EYE *Zosterops palpebrosa palpebrosa*

M 8-1-1912 Matheran, Bombay.

YELLOWTHROATED SPARROW *Petronia xanthocollis*

SA: "The Sparrow Collection contains specimens from Nander, Kharkheli and Eswantraopet."

STREAKED WEAVER BIRD *Ploceus manyar*

M 2-5-1911 Yapral, Deccan. — ? RK Dilip

SA: "...Col. Sparrow's collection contains the following specimens from Hyderabad: M 11-7-1912, M 31-7-1914 Trimulgherry."

WHITETHROATED MUNIA *Lonchura malabarica*

SA: "I have seen specimens in the Sparrow collection from Dichpalli, Navipet and Trimulgherry."

SPOTTED MUNIA *Lonchura punctulata*

F 15-7-1912, M 31-8-1912 Malappuram, Madras.

SA: "There is a specimen from Hyderabad State in Col. Sparrow's collection labeled: M 31-8-1912 Mulkaram".

BLACKHEADED MUNIA *Lonchura malacca*

M and F 1-2-1913 Kolair Lake, Madras.

L Kolleru

~~Mand F 1-2-1913 Kolair Lake, Madras.~~
BLACKHEADED BUNTING *Emberiza melanocephala*
SA: "There are, moreover, two specimens in the Sparrow Collection labeled: M 13-1-1911 Manwath Road, and M 30-1-1911 Partur."
REDHEADED BUNTING *Emberiza bruniceps*
SA: "The Sparrow Collection contains the following specimens: MM 28-1-1912, M and F 22-12-1910, M 27-12-1910, F 2-2-1911 Trimulgherry."
GREYNECKED BUNTING *Emberiza buchanani*
SA: "Specimen F 18-1-1911 Karkah (?) in Sparrow Coll."

ACKNOWLEDGEMENTS

This note would have been difficult to write had not Mr. Pranay Waghray fished out the date of The Times in which Col. Sparrow's obituary had appeared. It would not have been written at all but for the help of Mrs. Carol Inskipp, who was approached for help in obtaining a copy of the obituary and Col. Sparrow's notes from the British Museum of Natural History. She "managed to locate a microfilm of his obituary in Cambridge University Library (it is not available direct from The Times)", and sent a photocopy. She also "ordered copies of details of Colonel Sparrow's bird specimen collection from the British Museum." To both of them I owe special thanks.

ABBREVIATIONS USED IN TEXT

ad. = Adult, F = Female, imm. = Immature bird, juv. = Juvenile bird, M = Male, SA = Dr Salim Ali

GAZETTEER:

Alwal, Rangareddi, Andhra Pradesh.
Badduppur (Bahadurpur?, Azamgarh), Uttar Pradesh.
Basar, Adilabad, Andhra Pradesh.
Bezwada (Vijayawada, Krishna, Andhra Pradesh).
Bhikpoor, Nizamabad, Andhra Pradesh.
Bhyunder (Bhayander, Thane, Maharashtra)
Cardamom Hills, Kerala.
Chinapur, (Rangareddi, Andhra Pradesh ?).
Chintakani, Khammam, Andhra Pradesh.
Dichpalli, Nizamabad, Andhra Pradesh.
Elephanta Islands, Maharashtra.
Eswantraopet, Rangareddi, Andhra Pradesh.
Hyderabad, Hyderabad, Andhra Pradesh.
Indravati River, Jagdalpur, Madhya Pradesh.
Jalna, Jalna, Maharashtra.
Kamareddi, Nizamabad, Andhra Pradesh.
Kamlapur (? Chandrapur, Maharashtra).
Karkah,
Karkeli (Karkheli, Nanded, Maharashtra).
Kimmergut
Koila (Koilsa ?, Azamgarh), Uttar Pradesh.
Kolair Lake (Kolleru Lake, West Godavari, Andhra Pradesh).
Limbgaon, Nanded, Maharashtra.
Limboroo,
Madaram, Adilabad, Andhra Pradesh.
Malapet,
Malappuram, (Malapuram, Malapuram, Kerala).
Manoharabad, (Manoharabad, Rangareddi, Andhra Pradesh).
Manwath Road, (Manwath, Parbhani, Maharashtra).
Masaipet, Medak, Andhra Pradesh.
Matheran, Raigad, Maharashtra.
Medchal, Rangareddi, Andhra Pradesh.
Medohil (Mudhole, Adilabad, Andhra Pradesh).

Mirzapalli, Andhra Pradesh.
Mukhaid, (Mudkhed, Nanded, Maharashtra).
Mulkaram,
Mullurpet,
Mutbpalli,
Muttra (Mathura, Mathura, Uttar Pradesh).
Nadiarum, (Wadiarum ?) see below.
Naigaon (Madhya Pradesh ?).
Nanded, Nanded, Maharashtra.
Navipet, Nizamabad, Andhra Pradesh.
Nekkonda, Warangal, Andhra Pradesh.
Omri, (Umri, Nanded, Maharashtra).
Partur, Aurangabad, Maharashtra.
Pattencheru, (Patancheruvu, Medak, Andhra Pradesh).
Pingli, Nashik, Maharashtra.
Purna, Maharashtra.
Ramakapett (?, Nizamabad, Andhra Pradesh) ?
Rampoor (Rapur ?, Nellore, Andhra Pradesh) ?
Secunderabad, Rangareddi, Andhra Pradesh.
Sironcha, Chandrapur, Maharashtra.
Trimulgherry, Rangareddi, Andhra Pradesh.
Wadiarum, Andhra Pradesh.

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Address for correspondence:

Aasheesh Pittie, 14-7-370 Begum Bazaar, Hyderabad - 500 012.

BIRDS OF CUDDAPAH DISTRICT, ANDHRA PRADESH

* Aug'93 has been taken as date of observations, where dt is not given. This paper was referred on that dt.
N. Lindsay's records not taken from here.

S. RIYAZ UDDIN

During the British rule when the Cuddapah District was first constituted, it extended from Krishna river in the north to the Koundinya river in the south ie., parts of the following districts of (present) Andhra Pradesh - Kurnool, Chittoor, and Ananthapur were in Cuddapah district. The present Cuddapah district is in the heart of Rayalaseema, its boundaries being Nellore on the east, Ananthapur on the west, Kurnool on the north and Chittoor on the south. At present Cuddapah district comprises the taluks of Cuddapah, Rayachoti, Pulevendla, Proddatur, Jammalamadugu, Badvel, Rajampet, Siddhavattam and Kamalapuram (sub-Taluks).

There are many dry forests and hills in Cuddapah district. Some of them are protected by the government. The bigger hills of Cuddapah are, the Poltal on the road of Rayachoty. The Guvalacheruvu, also on Rayachoty road consists of deep forests and a ghat section with a forest rest house. Vanipenta at the Mydakur, Maspalli jungle consists of dry forests and small hills. Gandi forest also consists of jungle with Sandalwood, and the Sidhout jungle where the rare Jerdon's Courser *Cursorius bitorquatus* was rediscovered. The hills Palakonda, Velikonda, Nallamalais and Lankamala of the Eastern Ghats are the famous hills in the District. The Lankamaleswara Wildlife Sanctuary, covering more than 30 km radius, is situated here. The Jerdon's Courser was feared extinct but in 1986 it was rediscovered by a local villager, called Aitanna of Reddypalle village, with the help of the Bombay Natural History Society and A.P. Forest Department. The bird is protected in this sanctuary. One can see Panther *Panthera pardus*, Nilgai *Boselaphus tragocamelus*, Bear *Ursus sp.*, Mongoose *Herpestes* sp., Wild Boar *Sus scrofa*, Fox *Vulpes sp.*, and a variety of bird and insect life here. In this sanctuary we can see Sandalwood *Santalam indicum* trees (5%) and Red Sanders (75%). The local villagers use the Red Sanders in their daily life. Ornithologically Cuddapah is very rich.

The Penner River and its tributaries Chitravati, Kumudavati, Papaghni, Sagileru, Cheyyeru, Bahuda, Pipcha, Mandavi etc., flow through Cuddapah District. The Penner is 11 kms from Cuddapah town and in summer it dries up. There are many tanks in Cuddapah and surroundings. In Cuddapah their is one tank on DC road, approximately 5 kms in radius. It is called Davunicuddapah Charu. This tank attracts a large variety of water birds. This tank is unprotected and many trappers trap all the birds in the tank at the time of migratory season. There is another tank, 21 kms from Cuddapah, with a radius of 2 kms, near Kazipet. In this tank I have seen Black Ibis

Pseudibis papillosa. Nearly 25 kms from Cuddapah town, there is another big tank covering 4-5 kms radius, at Vontimitta. The local people use mud from here in making bricks. Fifteen kilometers from here is another tank with a radius of 4 kms, at Nandalur. From Cuddapah (20 kms) another tank is present at Radio station with a 2kms radius. Most villages have their own little tanks. All these tanks attract a large variety of waterfowl.

BIRDS OF CUDDAPAH A CHECKLIST:-

1. Little Grebe *Podiceps ruficollis* It is quite a common resident of the tanks of Cuddapah. I have seen many pairs in and around the tanks. When water is present at the little and big tanks these birds may be seen in large numbers.
2. Little Cormorant *Phalacrocorax niger* I have seen 2 pairs in Cuddapah town tank on DC Road. And I have seen these bird at other tanks also.
3. Spottedbilled Pelican *Pelecanus Philippensis* Mr. Campbell (1890), of Madras, wrote of seeing a large number of birds breeding in a small village called Buchupalle, in the extreme east of Cuddapah, in a secluded valley. But there are reports by some people that trappers have captured a Grey pelican at the tank on DC Road.
4. Darter *Anhinga rufa* I have seen 6 birds at DC Road tank in July of 1993. It was my first sighting of this bird. I have never seen any bird at other tanks.
5. Pond Heron *Ardeola grayii* It is a familiar and quite common bird. I have seen more than 30 birds at one time in the tank on DC road. And I have seen these birds with other birds on a neem tree in a Darga. This bird is seen in paddy fields and small ponds. It is resident bird.
6. Cattle Egret *Bubulcus Ibis* This bird was seen by me many times, perched on the back of cattle. It is a common bird. These birds are quite common at all the tanks in Cuddapah. I have seen a big nesting place at Adlur-Raspalle in the middle of Tangatur and Nandalur road. These birds make their nests on Tamarind *Tamarindus indus* and Neem *Azadirachta indica* trees. I have seen more than 50 nests on the trees. Nesting season is July to August in Cuddapah.
7. Grey Heron *Ardea cinerea* I have seen this bird once at a tank on DC road. That was my first sighting. I have not seen this bird at any other tank.
8. Median Egret *Egretta Intermedia* Egretta Intermedia, is a common bird seen with Cattle and little Egrets. This is a resident bird. It is present at all the tanks in Cuddapah and paddy fields.
9. Little Egret *Egretta garzetta* It is a common and resident bird. I have seen these birds at small ponds tanks and canals and paddy fields. I have seen these birds roosting on Neem trees.
10. Painted Stork *Mycteria leucocephala* I have seen more than six of these birds at Penner River, 11 kms from Cuddapah, two at DC Road tank and four at Radio station tank.
11. Black Ibis *Pseudibis papillosa* I have seen more than 10 birds at the tank near Kazipet, 21 kms from Cuddapah.
12. Lesser Flamingo *Phoeniconaias minor* I have seen a bird trapped by local trappers at the tank on DC Road.
13. Pintail *Anas acuta* I have seen two ducks at DC road tank in 1992. Dr. Lindsey (14-1-91) reports 250 Pintails at the tank at Vontimitta.
14. Widgeon *Anas penelope* I have not seen this bird but Dr. Lindsey has seen one, at Vontimitta tank on 14-1-91.
15. Garganey *Anas querquedula* I have seen 50 Garganey Teals at DC road tank. Dr. Lindsey has seen 233 Garganey Teals at Vontimitta tank.
16. Shoveller *Anas clypeata* I have not seen this bird but Dr. Lindsey has seen 40 at Vontimitta tank.
17. Common Pochard *Aythya ferina* I have not seen this bird but Dr. Lindsey has seen 50 at Vontimitta tank.

18. Tufted Duck *Aythya fuligula* I have not seen this Duck but Dr. Lindsey has seen 14 at Vontimitta tank.
19. Cotton Teal *Nettapus coromandelianus* I have seen 30 at Vontimitta tank in 1992.
20. Blackwinged kite *Elanus caeruleus* I have seen this bird sitting singly on electric wires. At Maspalli Ghat at Mydukur road and at many other places.
21. Pariah Kite *Milvus migrans* This kite is common and seen in many neem and tamarind trees. It flies in flocks over the Mutton Market at Cuddapah. It is most common Bird. Dr. Lindsey has seen this bird at Vontimitta and Siddavatam.
22. Brahminy kite *Haliastur indus* I have seen this bird at Maspalli (a small village across Penner river). Dr. Lindsey has seen one immature bird at Vontimitta tank and one at Siddavatam.
23. Steppe Eagle *Aquilanipalensis* I have not seen this bird but Dr. Lindsey writes that he has seen 1 adult bird at Vontimitta tank. This bird is not present in Andhra Pradesh Checklist.
24. Bonelli's Eagle *Hieraaetus fasciatus* I have not seen this eagle but Dr. Lindsey writes that he has seen this eagle at Siddavatam on 11-1-91.
25. Shikra *Accipiter badius* I have seen this bird on a peepal tree at two occasions. Dr. Lindsey has seen this bird at Siddavatam; one on 10-1-91 and one on 13-1-91.
26. Common Buzzard *Buteo buteo* I have not seen this bird but Dr. Lindsey has seen 2 birds at Vontimitta tank on 14-1-91
27. Harrier *Circus* sp. Dr. Lindsey was unable to identify one bird of this genus at Siddavatam on 10-1-91.
28. Whitebacked Vulture *Gyps bengalensis* I have seen 6 birds feeding on a carcass on the road from Jamalmudug to Cuddapah.
29. Scavenger Vulture *Neophron percnopterus* I have seen two birds sitting across a river which flows in Siddavatam at a old fort. Dr. Lindsey has seen 2 birds at Vontimitta tank.
30. Marsh Harrier: *Circus aeruginosus* I have not seen this bird, but Dr. Lindsey has seen a male and female at Vontimitta tank.
31. Redheaded Merlin *Falco chicquera* I have seen one bird from a bus at Siddavatam, sitting at a plane area, at a evening time.
32. Grey Partridge *Francolinus pondicerianus* I have seen these birds at Bhakarapet and on the road-side at Budvel in a scrub jungle. It is quite commonand many old shikaris hunt this bird for eating. Dr. Lindsey has seen 4 birds at Siddavatam.
33. Rain Quail *Coturnix coturnix* It is a quite common bird with a small body sitting on the road and when the vehicles come it may fly. Shikaris also hunt this bird.
34. Jungle Bush quail *Coturnix coromandelica* Seen by me on many occasions on the road-sides, feeding in low jungle and bushes. Dr. Lindsey has seen 2 birds at Siddavatam.
35. Grey Junglefowl *Gallus sonneratii* It is a favorite with the shikaris of Cuddapah. It is largely present at Guvalacharuvu Ghat section and at Madigamudug. I have seen one pair at Mamandur jungle going to Tirupati.
36. Peafowl *Pavo cristatus* I have seen one female at Lankamalleswara bird sanctuary.
37. Whitebreasted Waterhen *Amaurornis phoenicurus* It is a common bird in the tanks of Cuddapah. I took a bird from Shanker, who caught this bird from DC Road tank, and I let it loose. I have seen this bird feeding in a dirty canal which flows in the middle of crops of ground nut. Dr. Lindsey has seen one bird at Siddavatam.
38. Coot *Fulica atra* It is a common bird present in all tanks of Cuddapah. I have seen more than 100 birds at a time at DC road tank. Its 'tuk-tuk' call is very familiar. I have seen these birds at Radio Station tank also. Dr. Lindsey has seen 31 coots at Vontimitta tank.
39. Pheasant-tailed Jacana *Hydrophasianus chirurgus* A shikari friend and I saw this bird at Nandalur tank. I have seen this bird at DC road tank also.
40. Bronzewinged Jacana *Metopidius indicus* I have seen this bird feeding in the company of Pheasant-tailed Jacanas at DC road tank.

41. Redwattled Lapwing *Vanellus indicus* This bird is present at all the tanks in Cuddapah. I have seen more than 10 at DC road tank and also at many other tanks. Dr. Lindsey has seen 13 birds at Siddavatam.
42. Yellow-wattled Lapwing *Vanellus malabaricus* I have seen this bird at DC road tank, in pairs. However sightings are fewer than former. Dr. Lindsey has seen 7 birds at siddavatam.
43. Little Ringed Plover *Charadrius dubius* I have seen these birds at DC road tank, in small groups of 2-3 birds. Dr. Lindsey has seen 10 birds at Siddavatam.
44. Marsh Sandpiper *Tringa stagnatilis* I have not seen this bird but Dr. Lindsey has seen it at Siddavatam.
45. Green Sandpiper *Tringa ochruros* I have not seen this bird but Dr. Lindsey has seen 6 birds on 10-1-91 and 2 on 12-1-91 at Siddavatam.
46. Greenshank *Tringa nebularia* I have not seen this bird. Dr. Lindsey has seen one bird at Siddavatam.
47. Common Sandpiper *Tringa hypoleucos* I have seen about 10 pairs of these birds on the mud flats in the DC road tank. Dr. Lindsey has seen one bird at Siddavatam.
48. Indian Courser *Cursorius coromandelicus* This bird is present at Lankamalaswara wildlife sanctuary.
49. Jerdon's Courser *Cursorius bitorquatus* This bird is protected in the Lankamaleswara wild life sanctuary. Dr. Lindsey has seen 4 birds at this sanctuary.
50. Indian River Tern *Sterna aurantia* I have seen this bird at DC road tank, flying above the water.
51. Blue Rock Pigeon *Columba livia* These birds are common at Dargas and Mosques in Cuddapah and many people keep these birds as pets in their houses.
52. Indian Ring Dove *Streptopelia decaocto* These birds are present at Maspalli Ghat, always sitting on the overhead wires. These are very common birds and shikaris shoot and eat,or sell them.
53. Spotted Dove *Streptopelia chinensis* I have seen this bird sitting on an electric wire at Maspalli ghat and on the road at Kodur Jungle.
54. Little Brown Dove *Streptopelia senegalensis* It is a common resident of Cuddapah. I have seen many pairs often sitting on Electric wires, small bushes and on the road side. Shikaris hunt them and trappers trap them and sell them.
55. Roseringed parakeet *Psittacula krameri* It is a most common bird, seen on all the fruits trees and in gardens in the evenings, in large flocks of 50-60 birds.
56. Common Hawk Cuckoo *Cuculus varius* I have not seen this bird but Dr. Lindsey has seen one at Siddavatam.
57. Koel *Eudynamys scolopacea* It is a common bird, sitting on peepul and banyan trees.
58. Coucal *Centropus sinensis* I have seen this bird on many occasions on the road-side or in bushes. But this bird is seen singly most of the time.
59. Spotted Owlet *Athene brama* I have seen this bird sitting in a hollow in a tamarind tree. And once on an old wall at Maspalli.
60. Barn Owl *Tyto alba* I have seen this bird at a neem tree opposite to my house and many times flying above the houses. I have seen a pair breeding in a hole at a mosque.
61. Indian Great Horned Owl *Bubo bubo* I have not seen this bird but my shikari friend has seen it at Voltal Jungle flying from a rocky place.
62. Common Indian Nightjar *Caprimulgus affinis* I have seen this bird often flying near a water tank at Maspalli ghat.
63. Franklin's Nightjar *Caprimulgus affinis* Dr. Lindsey has seen one bird at Siddavatam.
64. House Swift *Apus affinis* I have seen these birds flying by the road and sitting on poles and current wires.
65. Palm Swift *Cypsiurus parvus* Dr. Lindsey has seen 3 birds at Siddavatam.
66. Crested Tree Swift *Hemiprocne longipennis* Dr. Lindsey has seen 1 bird at Siddavatam.
67. Pied Kingfisher *Ceryle rudis* I have seen this birds at DC road tank often fishing and flying.
68. Small Blue Kingfisher *Alcedo atthis* I have seen this little kingfisher at many tanks, fishing.
69. Whitebreasted Kingfisher *Halcyon smyrnensis* I have seen this bird fishing at small ponds and tanks.
70. Green Bee-eater *Merops orientalis* It is a common bird, sitting on electric wires and catching its prey.

NELAPATTU - TIME TO SOUND THE ALARM

Birdrecorder 14/5/98

MISCELLANEOUS NOTES

V. Santharam

Nelapattu, in the Nellore district of Andhra Pradesh, some 100 Kms. to the north of Madras city, has been the largest known pelicanry in southern India after the decline and fall of the Kolleru pelicanry in the West Godavari district of A.P. Although in no way comparable to the latter which had around 1,500 nests of the Grey or Spottedbilled Pelican *Pelecanus philippensis* during its heyday, Nelapattu, till recently, supported a good population of the Grey Pelican. Dr. Nagulu and Dr. Ramana Rao (Hornbill 1981 (3): 30-31), in 1980-81, estimated 300-350 adult birds in the pelicanry in the initial part of the season and this number went up to 600 at the time of departure. Even assuming that all of these did not breed, there were perhaps 200 nesting pairs in the season.

Tragedy struck the pelicanry in 1984 in the form of a severe cyclone which had a devastating effect on the sanctuary and its nesting waterbirds. A number of Barringtonia trees in the tank were uprooted and the tank bund breached following the uprooting of an old tree on the bund. That year was a failure as far as nesting was concerned, although some birds attempted to breed on the trees of an adjacent tank, which was not used in the earlier years. The tank bund was since repaired and some improvement works such as tree planting along the bund and on the tank bed, strengthening of the bund were undertaken.

In the following years, although the pelicans and other birds have been using the tank as before, their numbers have been on the decline. From the 200 pairs (in 1980-81), their numbers came to less than 100 pairs in 1989-90. In 1988 (January), C. Perennou and I counted 382 pelicans including some young ones, and in February 1989, we counted some 570 birds including several young. My estimate of the number of nests that year is between 100-125. This year, in February 1990, on two different dates, my count showed less than 200 birds including young and at any rate, the number of nesting pelicans were less than 100 pairs.

Having been a regular visitor to the Nelapattu Sanctuary since 1980, I can see the deterioration of the pelicanry through the years. I feel Nelapattu now requires urgent attention and action if it is to continue as a refuge for the endangered Grey Pelican. The most important and immediate action required is to make good the loss of trees.

Of the 120 trees in the tank prior to the cyclone, less than 40 now survive and even these appear to be under tremendous pressure. The pelicans use less than half of these trees and the rest are occupied by Openbill Storks *Anastomus oscitans*, Night Herons *Nycticorax nycticorax*, etc. One redeeming feature, however, has been the occupation of the smaller tank, adjacent to the main one by nesting birds including the pelican. These may account, in total, for another 25-30 trees. However, presently trees in the tank are scattered and wear a dry look. The top priority, therefore, should be to restock the tank with trees. It would be better if some fast-growing species such as Acacia species are planted in addition to these already planted as Barringtonia trees may take a longer period to come up. Planting trees close to one another, perhaps, could provide more security to the colonial nesters from aerial predators and nest robbers.

The other important threat is by the drawing of water from the tank for irrigation. Presently, a small channel lets out water from the tank into the adjoining fields. This could affect the success of the nesting attempts as the tank could get dried up even before nesting is over. This practice of irrigating fields from water collected in tanks is widespread in the district. Several motor pumps work day and night at each tank during the season, thereby draining out water rapidly. this could drastically affect pelicans and other waterbirds such as cormorants.

The wide publicity given by the A.P Forest Department has started drawing tourists and visitors from the nearby towns to Nelapattu. Although this is presently under control, efforts must be taken to keep the crowd in check and see that there is minimal disturbance to birds.

I fully agree with the views of (late) Prof. K.K. Neelakantan (Hornbill 1980 (1): 21-24) and feel it is high time we initiated some serious steps to monitor the population and movements of the Grey Pelican in the Indian sub-continent. From the Asian Waterfowl Count figures, there appears to be a great fluctuation in the number of pelicans seen each year. In 1988, for instance, there were 859 birds in India and 768+ in Sri Lanka while in 1989, the corresponding figures were 1,404 and 3,605 respectively. Are most of these birds non-breeding winter visitors or do they breed somewhere in our country ? If they do breed, where are their nesting sites ?

Received for publication: 25th June 1990.

Address for correspondence: 68, I Floor, Santhome High Road, Madras - 600 028.

A BRIEF NOTE ON THE BIRDS OF JAPALI, TIRUMALA HILLS, ANDHRA PRADESH.

M.S. Kulkarni

25 AUG 1990

Japali is a valley, 5 Kms. from the main entrance of 'sanctum sanctorum' at Lord Venkateshwara Temple, Tirumala Hills, towards the North, on the way to Papavinasham. This place is thickly wooded with a narrow stream passing through the valley. A very limited number of pilgrims visit the Lord Hanuman Temple situated deep inside Japali. Our visit was marked by a cloudy and overcast sky with intermittent drizzles. The following birds were seen in the area.

LIST OF BIRDS SEEN AT JAPALI, TIRUMALA HILLS, A.P.

1. LITTLE EGRET *Egretta garzetta*
2. BLACKWINGED KITE *Elanus caeruleus*
3. RUFOUSBELLIED HAWK-EAGLE *Hieraaetus kienerii*
4. TAWNY EAGLE *Aquila rapax*
5. BLACK EAGLE *Ictinaetus malayensis*
6. SHORT-TOED EAGLE *Circaetus gallicus*
7. PAINTED SPURFOWL *Galloperdix lunulata*
8. INDIAN PEAFOWL *Pavo cristatus*
9. BLUE ROCK PIGEON *Columba livia*
10. SPOTTED DOVE *Streptopelia chinensis*
11. COMMON HAWK-CUCKOO *Cuculus varius*
12. PLAINTIVE CUCKOO *Cacomantis passerinus*
13. CROW-PHEASANT *Centropus sinensis*
14. CRESTED TREE SWIFT *Hemiprocne longipennis*
15. BLUETAILED BEE-EATER *Merops philippinus*
16. SMALL GREEN BEE-EATER *M. orientalis*
17. GREEN BARBET *Megalaima zeylanica*
18. DUSKY CRAG MARTIN *Hirundo concolor*
19. COMMON SWALLOW *H. rustica*
20. BRAHMINY MYNA *Sturnus pagodarum*
21. INDIAN TREE PIE *Dendrocitta vagabunda*
22. HOUSE CROW *Corvus splendens*
23. JUNGLE CROW *C. macrorhynchos*
24. LARGE CUCKOO-SHRIKE *Coracina novaehollandiae*
25. IORA *Aegithina tiphia*
26. JERDON'S CHLOROPSIS *Chloropsis cochinchinensis*
27. REDWHISKERED BULBUL *Pycnonotus jocosus*
28. REDVENTED BULBUL *P. cafer*
29. YELLOWTHROATED BULBUL *P. xantholaemus*
30. WHITEBROWED BULBUL *P. luteolus*
31. SCIMITAR BABBLER *Pomatorhinus horsfieldii ?*
32. LARGE GREY BABBLER *Turdoides malcolmi*
33. JUNGLE BABBLER *T. striatus*
34. TICKELL'S BLUE FLYCATCHER *Muscicapa tickelliae*
35. WHITEBROWED FANTAIL FLYCATCHER *Rhipidura aureola*
36. PARADISE FLYCATCHER *Terpsiphone paradisi*
37. FRANKLIN'S WREN-WARBLER *Prinia hodgsoni*
38. ASHY WREN-WARBLER *P. socialis*
39. TAILOR BIRD *Orthotomus sutorius*
40. SHAMA *Copsychus malabaricus ?*
41. WHITETHROATEDGROUNDTHRUSH *Zoothera citrina cyanotus*
42. TICKELL'S FLOWERPECKER *Dicaeum erythrorhynchos*
43. PURPLERUMPED SUNBIRD *Nectarinia zeylonica*
44. MAROONBREASTED SUNBIRD *N. lotenia*
45. WHITE-EYE *Zosterops palpebrosa*
46. WHITETHROATED MUNIA *Lonchura striata*
47. SPOTTED MUNIA *L. punctulata*

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Address for correspondence: # 207, 2nd Floor, Srinidhi Apartments, Street 8, Habshiguda, Hyderabad - 500 007.

OPENBILL STORKS *ANASTOMUS OSCITANS* OF TSUNDURU, ANDHRA PRADESH

Koka Mrutyumjaya Rao

Tsunduru (Chunduru), a village in Andhra Pradesh, lies on the Vijayawada-Madras railway line, 45 Kms. away from Vijayawada.

Openbill Storks *Anastomus oscitans*, once abundant, were said to be around 3,000 numbers in and around Tsunduru and used to breed in the village. Due to the felling of their nesting trees, their numbers are now reduced. In recent years however, their numbers have increased marginally.

In the months of August and September they were seen in good numbers and trying to nest in Tsunduru. They are well protected by the villagers. But on the periphery of the village there is no protection to these birds. In 1988, six pairs nested on Palmyra Trees *Borassus flabellifer* on the periphery of the village and were also seen brooding. They had however, been disturbed mercilessly.

The nesting season here is between September and January. If favourable conditions prevail, the season extends upto March. During the season of 1988-89, there were 20 nests built by the storks. Four nests were on one Palmyra and the other sixteen nests were on two Neem *Azadirachta indica trees*. One neem tree in the premises of Mandal Praja Parishad office was a host for 10 nests. On the other neem tree, the rest of the six nests were built. There is another neem tree adjacent to the Mandal Praja Parishad office, on which the storks tried to nest, but were not allowed to, by the residents of the area.

Flocks of 20-30 storks are observed feeding on snails and large insects in the paddy fields around the village. Even though the Openbill storks are highly gregarious, the commonest flock size was of 20-30 birds. A larger flock of 150 birds was also observed. These birds are found throughout the year, feeding in the paddy fields within a radius of 35 Kms. of Tsunduru village.

If proper protection is provided to the birds and awareness spread among the public, Tsunduru will become a good nesting colony of Openbill Storks.

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Address for communication: Telephone Inspector, Opp. B.C. Hostel, Vijayalakshmi puram, Bapatla - 522 101.

SEX RATIO OF THE PINTAIL *ANAS ACUTA*

Not entered in Birdrecorders as originally done from orig. FORMS.

Humayun Taher

The Pintail *Anas acuta* is fairly common on our lakes and jheels and therefore is more noticed than other species of duck, during the migratory season. This note deals with an interesting aspect of the sex ratio of the Pintail, made during the Asian Waterfowl Census in January 1989. In almost all the places where Pintail were observed the males appeared to be in excess of the females. The approximate ratios at a few of the sites are as follows:

AREA	MALE : FEMALE	NO OF DUCKS
1. *Nelapattu, Pulicat, Sriharikota Is.(Nellore Dist.)*	4 : 1	1,000 +
2. *ICRISAT (Medak Dist.)*	4 : 1	500 +
3. *Koilsagar (Mahbubnagar Dist.)*	4 : 1	3,000 +
4. *Miapur (Rangareddi Dist.)*	4 : 1	300 +
5. *Himayat Sagar (Rangareddi Dist.)*	3 : 1	200 +
6. *Chinna Balanagar (Mahbubnagar Dist.)*	3 : 1	25
7. *Narsappaguda Tank (Mahbubnagar Dist.)*	5 : 1	100 +
8. *Turka Yamjal (Rangareddi Dist.)*	4 : 2	10
9. *Ibrahimpatam (Rangareddi Dist.)*	7 : 3	1,000 +

A Madras based naturalist, the late Mr. V.J. Rajan, of the Madras Naturalists' Society, was of the opinion that the ratio was approximately 80 males to 20 females (i.e., 4 : 1). Mr. Rajan was operating in the area around Tada (Nellore District), A.P. and elsewhere in Tamil Nadu.

The above point seems to be confined almost exclusively to the Pintail. In the other species of ducks the ratio of male to female seemed to be more or less equally balanced. This brings up the question - is there some reason for this unbalanced ratio?

It will be interesting to know from other birdwatchers as also more experienced ornithologists if there are similar observations either of Pintails or any other species of ducks.

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Address for communication: 150 Swan Drive, Alex Park, Harare, Zimbabwe.

A NOTE ON FEEDING BEHAVIOUR OF A SHIKRA *ACCIPITER BADIUS*

B. Dasarathi

It was an overcast August (90) evening. I was walking back home through a comparatively well wooded Secunderabad Court Complex.

I sensed some sudden movement above my head. I looked up to see a bird, which I could not identify trying to catch a small bat. The bat got away and the hunter disappeared into the foliage of a nearby banyan. I stuck to the spot,hoping the hunter would come out. After some time a koel dashed out, almost behind it, out came a Shikra and went after a bat, whether same as first I cannot say. This time also the bat proved to be craftier. The Shikra flew into a near by tree. Though I waited for some more time, the Shikra did not make any more attempts to catch the bats.

In the same place, I have observed Shikra hunt blossom headed parakeets and successfully kill sparrows. This was first time I have seen a raptor go after bats. According to the hand book, usual food is lizards, mice, squirrels and birds.

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Address for correspondence: 305 Lauder Ave., 501 Moscow, Idaho 83843, U.S.A.

INDIAN SHIKRA *ACCIPITER BADIUS* FEEDING ON CALOTES LIZARD

Suhel Quader

At around 3.30 p.m. on the 4th of March 1990, I noticed a male Shikra on the branch of a Coral Tree *Erythrina indica* in my garden in Jubilee Hills. It had a partially eaten lizard in its talons - probably a female common Garden Lizard *Calotes versicolor.*

It had already discarded the head, which was found later on under the tree, having gouged out the right eye and eaten a part of the brain. The fore-limbs had also either been eaten or discarded as I could not find them afterwards.

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COLOUR DIFFERENCE IN BILL OF YOUNG SCAVENGER VULTURES *NEOPHRON PERCNOPTERUS*

Humayun Taher

Rowriyal is about 30 km. from Hyderabad on the Bangalore road and is the site of a fair size lake. The habitat is mostly open ground with a few small trees and some fields on the edge of the lake. There is a sheep breeding farm nearby. The lake is about 3 km. away off the highway.

On 3rd December 1989, the BSAP visited Rowriyal. Here on the edge of the lake, we saw a Scavenger Vulture *Neophron percnopterus* with three sub-adult birds. When first sighted they were gliding overhead but presently they all alighted on the edge of the lake to feed on a large dead fish lying on the ground.

While idly looking at them through the binocular I suddenly saw that of the three young birds two had white bills while the third had a yellow bill identical to that of the adult. At first I thought that it was just a reflection of the sun. But after 15 minutes of careful observation I realised that such was not the case and one bird definitely had a yellow bill. The descriptions of the birds are as follows:

Adult: White with black wing primaries. A dirty yellow face and bill.
Sub-adult: Brown body. Mottled white on flanks and sides of wing. Face dirty yellow as in adult. Size similar to the adult. Bill white in two young and yellow in one.

The questions that arise are :

1. Is this due to over pigmentation in some birds ?
2. Was the yellow billed one from an earlier brood, possibly of the previous year?

More observations may throw more light on this point.

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Address for communication: 150 Swan Drive, Alex Park, Harare, Zimbabwe.

CHANGE OF ROOSTING SITE BY HOUSE SPARROW *PASSER DOMESTICUS*

M S Kulkarni

These common house sparrows numbering around six hundred to seven hundred were roosting on an eight year old medium sized neem tree near Chikadpally Municipal Market. There is goddess Pochamma's temple underneath this tree.

The roosting of sparrows used to take place every evening for three years, 1986, 87, 88, continuously. It was a pleasant sight for birdwatchers.

It was noted that the roosting does not take place any more on the tree. As per the observation carried out for the disturbance of roosting sight it was observed that the tree used to be illuminated by small electric bulbs on the eve of Bonalu Festival and also on other festivals. Big loud speakers were used for the festivals which had not less than 40 watts output. These activity caused a lot of disturbances in the routine roosting of house sparrow. Not only this activity of illumination disturbed the birds but also hostile human activity. Ultimately the whole flock of *Passer domesticus* abandoned this roosting side and move away.

Recently, that is in the month of November, December - 1990, it was observed that two more roosting sites of *Passer domesticus* is making place in the same locality but the sites are very much distance apart. Number of birds these trees are comparatively very less in number when compared with the first site.

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Address for communication: # 207, 2nd Floor, Srinidhi Apartments, Street 8, Habshiguda, Hyderabad - 500 007.

MUTUAL PREENING IN MUNIAS *LONCHURA* SP.

Humayun Taher

I have got at home, as pets, a pair of spotted Munias *Lonchura punctulata* and a pair of White throated Munias *Lonchura malabarica*. These birds are housed in a wire cage in my room and, being fairly tolerant of my presence they behave fairly naturally in my presence. The present note deals with the preening behaviour of the pair of White throated Munias.

The birds always perch on twig placed across the cage. The Spotted Munias preen themselves periodically (about every 1/2 hour on an average). They preen individually. The preening of the White throated Munias is much more interesting.

Preening activity usually begins when I move their cage from the room floor onto the window sill. This is always done in the early hours of the morning. The Spotted Munias descend immediately onto the grain scattered in the cage. This is when the Whitethroated pair begin their mutual preening ritual.

The slightly larger of the pair is the first to begin. It begins to gently bite at the head and neck of the smaller bird. I consider the plumper and larger bird to be the male and the slimmer and smaller bird the female. When the male begins to peck and bite gently at the females neck, the female stretches her throat and sits with bill pointed towards the sky. The male now begins to gently nibble at her throat, breaking off periodically to peck at her head and the region of her eyes and neck. Then he again returns to her throat. Presently he begins to work his way lower down to her belly. The female now begins to stretch and arch herself even more. The male continues to nibble at the plumage of her belly, breaking off as usual to nibble her head and neck.

Having covered her underparts the male hops about until the female recovers from her trance like state into which she has by now fallen. Once the female recovers, and this is signaled by her shaking out her feathers thoroughly with an action called a rouse, the male begins to systematically preen her back and wings and finally her tail. When this is over the female gives herself another shake and both sit meditating for a moment.

Now it is the turn of the female to begin nibbling at the neck of the male. The male responds in the same way as the female by arching his neck and pointing his bill skywards. The entire act described above is then repeated with scarcely any change.

The one exception is that the female does not break off activities to nibble at her mates head, neck and eyes. With this minor difference all actions are the same.

Finished with their mutual preening the White throated Munias chatter to each other for a while and then descend to joint their spotted brothers on the grain. I once timed the entire sequence and it lasted almost 20 minutes.

Which just goes to show that bird behaviour watching need not necessarily take one out into the wide open spaces - (not that there are any left) - but can actually be done within the confines of a room - (10 feet by 10 feet in my case)! Why don't you my reader try it too ? It could be a rewarding way of spending spare time.

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Address for communication: 150 Swan Drive, Alex Park, Harare, Zimbabwe.

GLEANINGS

SEXUAL SELECTION IN BIRDS

Suhel Quader

Introduction

The idea that animals choose partners with whom to mate is not new. It existed even before Darwin and the publication of his books. But it was Darwin who formulated an explicit evolutionary theory, and coined the term Sexual Selection for the first time - a term which (like many of his) survives till today. Darwin published his book *The Descent of Man and Selection in Relation to Sex* in 1871, a full twelve years after the *Origin of Species*. The reason for this delay was that he was wary of the criticism that he expected for such a revolutionary book, and wanted to wait until after the furor over the *Origin of Species* had died down (Eisely 1972).

Today, sexual selection is widely, if not universally, accepted, and most controversy focuses on the mechanism through which it operates, rather than on whether it exists or not. The earlier view of traditional ethologists that courtship rituals and mating were harmonious ventures in which males and females cooperated to propagate their respective genes, is no longer so widely held (Krebs and Davies 1993). More emphasis is now placed on the idea that there are conflicts of interest between the two sexes. Before we go any further, the reasons for these conflicts of interests must be examined.

Females and males : the fundamental dichotomy

Sexual reproduction entails gamete formation by meiosis and the fusion of genetic materials from two individuals - usually a male and a female. Most commonly, these two gametes are of different sizes, and this is called a anisogamous sexual reproduction. By definition the sex that produces the smaller, more numerous gametes are the males, while female gametes are not only much larger, but are produced in much less numbers as well. This fundamental difference in gamete size and associated investment in offspring has far-reaching consequences for sexual behaviour.

Since the total number of eggs produced is vastly less than that of sperm, females are a scarce resource for which males compete. A male can increase his reproductive success by finding and fertilizing many different females, but a female can only

increase her success by turning food into eggs or offspring at a faster rate (Krebs and Davies 1993). Thus, the number of offspring female can produce is limited, and in comparison, a male can potentially have a limitless number of offspring. Trivers, in his 'parental investment' hypothesis (Trivers 1972), emphasized the relationship between the investment of resources in gametes and other forms of care, and sexual competition. According to him, where one sex invests considerably more than the other, members of the latter will compete among themselves to mate with members of the former. Thus, males tend to compete for access to females, who, since they are in much demand, can afford to be 'choosy' and are selective about whom they mate with. With this background we can begin to examine the types of sexual selection and the mechanisms by which it might operate.

Sexual Selection

Selection for traits which are solely concerned with increasing mating success is usually referred to as sexual selection (Krebs and Davies 1993). This is in contrast to natural selection, which operates on traits concerning survival as well as other aspects of reproduction (Mayr 1972).

Sexual selection can work in two ways: by favoring the ability of one sex (usually males) to compete directly with one another for fertilizations, for example by fighting (intrasexual selection), or by favoring traits in one sex which attract the other (intersexual selection). The two kinds of selection may operate together.

(i) Intrasexual selection: The most dramatic and obvious way in which males compete for mates is by fighting and ritualized contests, and often males have evolved weapons for this purpose. The spurs on the tarsi of many gallinaceous birds serve as such weapons. Intrasexual selection often leads to the exaggeration of characters in males which help their owners in competing. The most obvious of such characters is body size. Species in which there is intense competition tend to show a greater sexual size dimorphism (e.g. Junglefowl) than species with less competition (e.g. egrets, tits). Males may also compete indirectly after copulation. This is through sperm competition, and occurs when a single female mates more than once such that viable sperm of two or more males are present simultaneously in her reproductive tract. Female birds are capable of retaining sperm for long period and sperm competition has recently been shown to be an important factor in avian mating strategies.

(ii) Intersexual selection: Since females in the great majority of species are the sex which provided the most parental investment, they might be expected to choose their

mates carefully in order to get something in return. Hence females are on the whole choosier than males during courtship. Choosiness starts from discriminating between species (to avoid hybridization), and extends to discriminating between males within a species. While choosing a male, females can look for direct or indirect benefits. (a) Direct benefits: good resources and parental ability :- In many birds, males defend breeding territories containing resources which play a crucial role in the survival of a female,s eggs or young. The quality of a territory may be determined by such factors as the absence of predators and/or the presence of sufficient food. Since food is a resource which often limits a female's capacity to make eggs, during courtship females may choose whether or not to mate with a male on the basis of his ability to provide food. In some birds, males may provide food for the female during courtship ('courtship feeding') which makes a significant contribution to her eggs. In birds the male usually helps to feed the young and courtship feeding may play the additional role of indicating to the female how good the male is at bringing food for the young. This sort of correlation is seen in the common tern stema fuscata.

(b) Indirect benefits : good genes :- If some males have better genes than others a female could improve the success of her progeny by choosing males with good genes. Experiments with Drosophila have shown that the offspring of females who had a choice of males to mate with had a slight but consistently greater competitive ability than those of females who were not given a choice of mates.

Sexual selection and the evolution of elaborate traits

The theory of sexual selection is most famous as an attempt to explain the evolution of excessively elaborate adornments and displays of male peacocks, other pheasants, birds of paradise and so on. Some elaborate displays may have evolved for use in contests between males, but some have almost certainly evolved as a result of selection by females. There are two competing hypotheses to explain how such selection might produce elaborate traits: Fisher's (or the 'runaway') hypothesis, and the handicap hypothesis.

(i) Fisher's hypothesis: This says that elaborate male displays may be sexually selected simple because it makes males attractive to females (Fisher 1930) (in Krebs and Davies 1993). Initially, if females preferred a particular trait (for example long tails) because such a trait was indicative of male quality (or large tails were easier to detect, or females had a pre-existing sensory bias to longer tails), the genes for this trait would be passed on to that females offspring. At the same time, if this preference also had a genetic basis, the genes for preferring long tails would also be favored and be passed on to the next generation. Once the female preference for longer tails starts

to spread, longer tailed males will gain a double advantage because they are better at flying and will be more likely to get a mate. A choosy female will get a two-fold advantage as well: she will have sons that are both good fliers and attractive to females. Covariance between the genes for long tails and those for the preference for long tails is essential for Fisher's hypothesis. As the positive feedback between female preference and longer tails develops, gradually the benefit of attractive ('sexy') sons will become the more important reason for female choice. Since the Fisherian model proposes a positive feedback, it is also known as a runaway process. However the favored trait might eventually decrease the survival ability of males, and when this decrease in survival counter balances sexual attractiveness, selection for increasing tail length will grind to a halt. An important aspect of runaway selection is that eventually females choose for no other reason than attractiveness and not for quality.

(ii) The handicap hypothesis: This was originally suggested by Amotz Zahavi (1975)(in Krebs and Davies 1993) and has subsequently been built upon by various other scientists. Zahavi pointed out that many elaborate ornaments (like the peacock's train) are a handicap in day-to-day survival, and he hypothesized that females prefer such traits precisely because they are handicaps and therefore act as a reliable indicator of a male's genetic quality. If a male carries a handicap and is still around to be inspected by a female, then he is living proof that he carries good genes as well, which help him to survive despite of his handicap. Thus females select for good genes by selecting to mate only wit h males whose displays honestly indicate their genetic quality. There are two conditions for the handicap principle to operate: (1) higher levels of handicap must be more costly and (2) at the same level of handicap, the costs must be greater for a low quality male than for a high quality male. It is important to note that in this hypothesis the 'good genes' are genes for survival and reproduction, rather than genes purely for attracting females, as assumed in Fisher's hypothesis.

Hamilton and Zuk (1982) (in Krebs and Davies 1993) proposed a particular version of the handicap hypothesis, namely that sexual displays are reliable indicators of genetic resistance to disease. If males are able to express the full development of their secondary sexual characters only when they are free of diseases, females, by choosing for elaborate displays, would, in effect, be choosing for the genes for disease resistance.

Sexual Selection Birds

There are many studies which have looked for correlations between male mating success or female preference, and male sexual displays. However, studies based purely on observation or correlations do not demonstrate a cause-effect relationship. This is best done by experimental study.

1) Longtailed widow bird *Euplectes progne:*

This is one of the first studies to demonstrate mate choice by females for a particular male character. Malte Andersson (Andersson 1982) (in Krebs and Davies 1993) showed in 1982 that the females of this highly polygynous species prefer males with long tails. This was achieved by experimental manipulation of the tails of several males and subsequent observation of the degree of preference females showed for them. The male is a sparrow-sized bird with a tail up to 50 cm long. The female's tails is about 7 cm long, presumably close to the optimum for flight. Andersson studied 36 males which he divided into four groups. In one group he cut the tails shorter, and used these bits of tail to lengthen the tails of the second group of males. The remaining two groups acted as controls: one was left untouched, while the other group had their tails cut and glued without altering the length. By counting the number of nests in the territory of each male, Andersson showed that before his manipulations there was no difference in the mating success of the different groups, while afterwards the long-tailed males did significantly better than the controls or the shorter tailed birds.

2) Scarlet-tufted malachite sunbird:

Evans and Hatchwell (1992)(in Krebs and Davies 1993) studies two aspects of sexual selection in these birds. The males of these sunbirds display two prominent signals - a long tail and scarlet pectoral tufts. Males defend territories which consists of Lobelia flowers. The average width of a tuft is 9 mm. There is no correlation between the width of a male's tuft and his age or size. The tufts thus appear to reflect fighting ability, and this was proved experimentally. Males whose tufts were widened gained in the number of flowers they defended, while those whose tufts were reduced in width not only lost flowers to the their neighbours, but also had to spend more time in aggressive encounters. Thus the width of the pectoral tufts plays a role in intrasexual competition. When tail length was examined, it was found that paired males holding territories had longer average tail lengths than unpaired males which also held territories. This indicates that tail length is a trait which females select for (intersexual competition). This species is interesting in that the males show two totally different exaggerated traits, one each to signal to males and to females.

3. Barn swallows *Hirundo rustica:*

Anders Moller (Moller 1988, 1989, 1990)(in Krebs and Davies 1993) studies this species in order to test the Hamilton-Zuk hypothesis that females choose males on the basis of traits which reflect a low parasite load. The barn swallow is a monogamous species with very little dimorphism except that malesles have more elongated outer tail feathers. There is competition among males for mates because birds which pair up early have a reproductive advantage- early breeding increases the chance of raising several broods during that season. Moller first showed experimentally that females preferred males with longer tails. He also showed that males with experimentally elongated tails were handicapped in their foraging. Then he went on to demonstrate that the blood-sucking parasitic mite Ornithonyssus bursa reduced growth in nestling and that resistance to these mites was heritable. Finally, he found that males with longer tail ornaments had offspring with smaller mite loads, even when their offspring were raised in another nest. This suggests that the length of a male's tail signals his degree of parasite resistance, and the female's preference for the male ornament makes good sense under the Hamilton-Zuk hypothesis that they are choosing males able to pass on 'good genes' to offspring.

Conclusion

Birds have always played an important part in the study of be behavioral ecology. These examples of the operation of sexual selection in birds provide unequivocal proof that Darwin was right when he postulated that sexual selection could act as powerfully as natural selection. Indeed, at times this form of selection can be even stronger than natural selection per se. The last decade has seen an intense interest in both the theoretical aspects of sexual selection, as well as studies of intrasexual competition and mate choice in the field and laboratory. At present. there is a lull in such studies, but it is probably safe to predict that sexual selection will come back with a bang in a few years from now.

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Address for correspondence: Wildlife Institute of India, P O Box 18, Dehra Dun-248001.

REVIEW

A CHECKLIST OF BIRDS OF ANDHRA PRADESH

(BY SIRAJ A TAHER AND AASHEESH PITTIE)

Bharat Bhushan

Even during the process of its compilation, this checklist has been used by some birdwatchers studying the Andhra regions. However, it has taken the authors nearly five years to publish and circulate the list on a limited scale. As Humayun Abdulali comments in the foreword (written in 1987), regional checklists usually include nearly 30% of Indian avifauna and are thus useful and necessary. Abdulali further adds that local natural history societies (like the Birdwatchers Society of Andhra Pradesh) would in future encourage other local annotated checklists and catalyse detailed work on regional ornithologies.

The area under Andhra Pradesh formerly included parts of erstwhile Hyderabad, Mysore, Madras and other small princely states. Topographically it comprises the Deccan Plateau, the Eastern Ghats with the Godavari, Krishna, Tungabhadra and Pennar rivers with their extensive deltas. This varied topography contains 58 avian families comprising 446 species according to the checklist - 75% of India's 77 avian families and 37% of the total number of species found in the country. Andhra Pradesh is the only state where the Jerdon's courser *Cursorius bitorquatus* is found. Also found are the endangered great Indian bustard *Ardeotis nigriceps* and the lesser florican Sypheotides indica. The pinkheaded duck *Rhodonessa caryophyllacea* has also been recorded here earlier.

The authors have listed their major sources of information in the Introduction and this list, along with the references at the rear, is a veritable ornithologist's delight. Personalities such as Hugh Whistler and Norman Boyd Kinnear in the Vernay Scientific Survey, Salim Ali in the Hyderabad State Survey, Humayun Abdulali in Visakhapatnam, and Dillon Ripley in the Eastern Ghats near Visakhapatnam, have at times looked at Andhra with more than general interest.

The introduction to the checklist also gives information about the region's topography. This could have been provided in more detail. Additionally, notes about locally rare birds such as the sarus crane *Grus antigone*, yellowthroated bulbul *Pycnonotus xantholaemus* and the little spiderhunter *Arachnothera longirostris* which have limited distribution should have been included.

A critical drawback in the checklist is that the status records for each species listed are confined to the vicinity of Hyderabad only instead of considering the entire state of Andhra Pradesh. It is typical of the 'elitist isolation' that some regional groups have fallen prey to by not being able to develop and organise birdwatchers in parts of their state outside their city. Future editions of the checklist could take into account status records of other areas from the various studies listed in the bibliography.

The two maps are not adequate in conveying information at a comprehensive level in relation to the importance of the bird-lists. While the map of India in the earlier copies had serious boundary errors (which have since been corrected in the later copies), the map of Andhra Pradesh is almost illegible.

The authors have taken care to adhere strictly to the criteria that the listed species should (1) have been reported in published literature for the state, (2) have been reported by highly reliable persons including the authors, and (3) be limited to binomials only for uncollected records.

The last mentioned criteria seems to have been tricky because of the paucity of definite information. Going ahead with the ambiguous assumption that "the races are more easily distinguishable at the extreme limits but move inwards to integrate at a common centre", the authors decided to accept and use (1) the race occurring in Andhra Pradesh, and (2) wherever the race could be easily identified in the field, e.g. *Milvus migrans lineatus.*

The listing for each species is followed by its Telugu and Hindustani name. Some of the Telugu names seem to be extraordinarily logical and hard to believe that such differentiation could be sustained historically by ethno-lingual justification. For example, (1) longbilled vulture - 'podugumukku boruvua' (= longnosed vulture) and whitebacked vulture - 'tella veepu boruva' (= whitebacked vulture), (2) orangebreasted green pigeon - 'pasupu pacha pavuramu' (=yellow green pigeon) and, (3) baya - 'pasupu pitta' (= yellow bird) and blackthroated weaver bird - 'nallagontu pichuka' (= blackthroated sparrow).

While spelling errors are plenty in the English as well as in the transliterated Telugu and Hindustani names, there are some errors in the listing itself. For example, the north and south indian crested goshawks have their races *indicus* and *peninsulae* listed wrongly for each other, some birds have been listed as an entirelydifferent race, eg. eastem redlegged falcon *Falco vespertinus* should be *F.v. amurensis* in Andhra Pradesh and not F.v. vespertinus as mentioned.

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